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FROM

W. T. Walsh.

March 21, 1902.

Commonwealth of Massachusetts, Supreme Judicial Court.

Hampden, ss.

HOLYOKE WATER POWER COMPANY,

PETITIONER,

v.

CITY OF HOLYOKE.

BEFORE

EVERETT C. BUMPUS, JAMES E. COTTER, AND
EDMUND K. TURNER,

Commissioners appointed by the Supreme Judicial Court.

APPEARANCES:

For Petitioner: FRANK P. GOULDING AND WILLIAM H. BROOKS.

For Respondent: NATHAN MATTHEWS, JR., ADDISON L. GREEN, AND
NATHAN P. AVERY.

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APRIL 30 TO MAY 10, 1901.

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BY

FRANK H. BURT, MISS MARY A. POWELL, MISS SAIDEE M. SWIFT,
AND WM. L. HASKEL.

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SEVENTY-SECOND HEARING.

SPRINGFIELD, Tuesday, April 30, 1901.

The Commissioners met at the Court House at eleven o'clock, and a recess was taken until 2 P.M.

AFTERNOON SESSION.

Mr. MATTHEWS. Mr. Chairman, we have looked at the Company's books, with their permission, this morning, and have given to the officers of the Company a list of certain entries of which we would like copies; and copies are to be furnished us to-morrow morning, or at the next hearing, and we will put them in then. Mr. Brooks, I would like to see the valuation, or the estimate, that you used with Mr. Stone yesterday afternoon, the appraisal, so-called, of the Lowell plant before the Gas Commissioners.

Mr. BROOKS. All right. You can have it. When do you want it?

Mr. MATTHEWS. Have you got it here? There was so much, your Honor, said about that exhibit, that we would like to put it in.

Mr. BROOKS. Put it in? We shall object to its going in evidence.

Mr. MATTHEWS. We offer it.

Mr. BROOKS. We will take a ruling on it.

The CHAIRMAN. Only so far as it relates to the special items.

Mr. BROOKS. Those he answered from the schedule.

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Mr. MATTHEWS. My point is this. There was a schedule of items, aggregating many in number and some considerable amount in value, and he was asked about some of them, the effort evidently being to contrast his valuations of those particular items with valuations of somewhat similar property in Holyoke made by Mr. Blood for him. We think that might leave an erroneous impression in the minds of the Commission. We think that some of the items going in show, perhaps, a higher valuation of the Lowell plant than in Holyoke, while others might, perhaps, show a lower valuation.

Mr. BROOKS. We object.

The CHAIRMAN. I thought we ruled that out yesterday.

Mr. MATTHEWS. It was ruled out at one time yesterday, — that is, the total, the aggregate, \$450,000, or whatever it was, was ruled out. Now I would like to offer the whole schedule in view of the subsequent testimony of Mr. Stone and the questions asked by Mr. Brooks and the answers given by the witness, — I desire to offer the entire schedule.

The CHAIRMAN. I think you will have to take an exception on that, Mr. Matthews.

Mr. MATTHEWS. Very well, sir. Now is Mr. Stone here?

Mr. BROOKS. Mr. Stone?

Mr. MATTHEWS. Mr. Snow, I meant.

Mr. BROOKS. Yes. Mr. Gross is out in the other room.

Mr. MATTHEWS. Perhaps we had better go on with Mr. Gross, then.

The CHAIRMAN. Here is Mr. Snow. I thought you called for him.

Mr. MATTHEWS. I did; but Mr. Brooks said Mr. Gross is here, and, as he was on the witness stand, I thought I would finish him up.

The CHAIRMAN. Very well.

Mr. BROOKS. Do you make any question about the title that is conveyed of any of the land or rights in this lease or deed offered the other day by the Holyoke Water Power Company to the City?

Mr. GREEN. We have had the title looked up since this offer was made to us; the title is being finished. Many things are suggested by this new offer, in the way of rights, which it is very difficult to ascertain in running over the Water Power Company's record. They conveyed so much that I am informed that the gentleman who is looking up the title had 70 pages of minutes, of book and page alone, of conveyances to examine. If we do make any question, we will suggest it.

Mr. BROOKS. Well, then, may it please your Honors, with the permission of the other side and the Chairman, we won't offer any deeds showing our title to the property or to the various rights that are contained in this conveyance that was introduced in evidence in Boston last Friday, through Mr. Gross, with the understanding that, if our friends make any contention about it, we shall have the liberty of putting in our title to such parts as you make any controversy about later.

The CHAIRMAN. I don't think there will be any objection to that.

Mr. MATTHEWS. No.

Mr. BROOKS. Then that will shorten Mr. Gross.

CHARLES E. GROSS, *resumed*.*Cross examination by Mr. MATTHEWS, continued.*

Mr. BROOKS. Mr. Matthews, you called upon Mr. Gross to produce certain agreements. Among them you called upon him to produce the agreement for surplus water with the Crocker. (Giving paper to Mr. Matthews.) There are various other matters that you called for.

Mr. MATTHEWS. This relates to four mill power with the Crocker Manufacturing Company. They had six. There should be an agreement relating to the other two mill powers.

Mr. BROOKS. This is surplus.

The WITNESS. (Producing paper.) This is the other one that is owned by the Crocker,—the other power, for which agreement was made with the predecessors in title, the Dickinson & Clark.

Mr. GREEN. The sixth permanent power.

Mr. MATTHEWS. I understand the witness produces two agreements relating to the use of surplus power by the Crocker Manufacturing Company and its predecessors in title, dated respectively July 25, 1881, and Nov. 7, 1881.

Q. Were these the agreements in force, Mr. Gross, in reference to the use of surplus power up to 50 per cent. of the permanent by the Crocker Manufacturing Company at the date when they obtained the six additional non-permanent mill powers? A. I so understand it.

Mr. MATTHEWS. I offer those.

Mr. GREEN. Ten, that is.

The WITNESS. Ten.

Mr. MATTHEWS. Ten additional.

The WITNESS. Here is another that you asked for,—the agreement of George R. Dickinson.

Q. Dated Jan. 14, 1882? A. Yes, sir.

Mr. BROOKS. Will your Honors excuse us for two or three minutes while we run over these? I have not seen them before myself.

(Counsel for petitioner examined the papers.)

Q. Have you anything more for me to look at while they are examining these? A. In answer to your last question, Mr. Matthews, I here produce an agreement between the Holyoke Water Power Company and James H. Newton, dated April 11, 1891, which you asked me to produce.

Mr. BROOKS. May it please your Honors, each of these three surplus agreements that have been submitted to us is prior to the year 1888.

The CHAIRMAN. But they are in force, so the witness states.

Mr. BROOKS. Well, I—

The CHAIRMAN. But they are now in force; I do not see that that rule would apply.

Mr. BROOKS. Well, is not the lease in force? The leases that were in force, that were made prior to 1888, may it please your Honors—the indenture of non-permanent power is in force, that was made prior to 1888, and I certainly understood your ruling on Friday in Boston to be that Mr. Matthews could go back not beyond the year 1888 in the consideration of the Crocker Manufacturing Company and the various other companies situated on the canal or canals.

The CHAIRMAN. I understood the witness to say that these contracts are the ones that are in force now; I suppose some of those others were.

Mr. BROOKS. All of the others were.

The CHAIRMAN. Are you sure about all of the others?

Mr. BROOKS. Why, may it please your Honor, the indenture for non-permanent power has no limit.

The CHAIRMAN. What?

Mr. BROOKS. The indenture for non-permanent power has no limit.

The CHAIRMAN. What are those papers?

Mr. BROOKS. These are contracts or agreements for surplus water.

Mr. GOULDING. Dated in 1881.

Mr. BROOKS. Dated in 1881.

The CHAIRMAN. They are to be continuous, are they?

Mr. BROOKS. I do not say that, no, sir.

The CHAIRMAN. I don't know anything about it.

Mr. BROOKS. I do not say that; but I say that it would make no difference whether or not they were continuous, under the ruling that I understood your Honors to make Friday in Boston.

Mr. MATTHEWS. The object of introducing these papers is not to show a price. So far as price goes, we understand that we are confined to leases made since Jan. 1, 1888, under the ruling of the Commission. These papers are introduced simply for the purpose of explaining the transaction into which the Holyoke Water Power Company entered with the Crocker Manufacturing Company and the Dickinson Manufacturing Company, both under date of March 1, 1895, for additional power. These contracts show the amount of 50 per cent. surplus power, so-called, that those respective corporations were entitled to on March 1, 1895, the date upon which the additional non-permanent mill powers were secured. This witness has testified to that both the other day and this afternoon. The papers have a material bearing upon the purpose and object of the leases for ten non-permanent mill power in the one case and six non-permanent mill power in the other case, three of the mill power in each case being at a higher price, apparently, than the rest. These papers serve to explain that difference, and are material to our case upon the issue which was argued on Friday morning, and then decided, as we understood it, in our favor,—as to what was the actual, going market-selling price of non-permanent water power in the city of Holyoke within a reasonable time. This was in 1895.

Mr. BROOKS. In my density I do not understand the purpose of my brother now in offering these, and I simply invoke the ruling already made in this case, may it please your Honor.

The CHAIRMAN. It is pretty hard work for us to follow all these papers; and I think the better rule would be to have these papers marked, and we will examine them later, to see whether they have any application in the way stated by Mr.

Matthews. If they were excluded by our ruling of Friday, we will exclude them.

Mr. MATTHEWS. If your Honor please, the ruling Friday was to admit them.

The CHAIRMAN. I say, going back of 1888.

Mr. MATTHEWS. That was a ruling made before Friday. We claim that these papers are admissible within the ruling of the Commission of Friday morning.

The CHAIRMAN. We will have them marked, and will examine them; and, if they are brought within the ruling of Friday morning, we will admit them. That is 1888. If they are later than fixed by the ruling, we will exclude them. It is simply impossible for us to keep track of all these papers.

Mr. MATTHEWS. Then, Mr. Chairman, it will be necessary for us to point out the application of these papers, because they do not speak for themselves.

Mr. BROOKS. If I may be permitted to speak just for a moment with reference to one of these agreements, it purports to be with the Dickinson & Clark Paper Company. Now I do not understand that that applies to the George R. Dickinson Paper Company.

Mr. MATTHEWS. Perhaps it doesn't. Let me see that.

Q. Do you know, Mr. Gross, what the Dickinson & Clark Paper Company was, and its relation to the George R. Dickinson Paper Company, so far as the leasing of power goes? A. I supposed that the Dickinson & Clark Company was the predecessor in title to the Crocker.

Q. You mean the George R. Dickinson Paper Company, don't you? A. Let me look at it. I thought this supplemented the Crocker.

Mr. BROOKS. That is just what he means, the Crocker.

Mr. MATTHEWS. I should have said, then, the Crocker, instead of the George R. Dickinson Paper Company.

The WITNESS. They were predecessors in title to a portion of the power subsequently acquired by the Crocker Manufacturing Company.

Q. Now one of the papers, dated July 25, 1881, relates to

the 50 per cent. surplus on four mill power, doesn't it? A. Yes, sir.

Q. And the paper dated Nov. 7, 1881, relates to 50 per cent. surplus on two mill power? A. Those make up the six mill power, the six permanent powers of the Crocker Manufacturing Company.

Mr. MATTHEWS. That is the explanation of that point, Mr. Brooks.

Mr. BROOKS. How is that competent, then?

The CHAIRMAN. No one says it is. We think the practical way is to have those papers marked, and we will examine them.

Mr. BROOKS. And the other one, with the George R. Dickinson Company,—we don't understand that.

The CHAIRMAN. We don't know anything about that. They are simply to be marked for identification.

Mr. GOULDING. What is this mystery about that date, 1881? That must be for the purpose of showing something that occurred in 1881. It don't show anything, and I don't know how it could show anything that relates to any written papers made fourteen years later. How can there be any relation there?

The CHAIRMAN. Can there be any reference to these papers of 1881 in papers executed in 1895?

Mr. MATTHEWS. We claim that they are material, may it please your Honor. They are to be construed in connection with the trade of 1895. It would be impossible to understand the transaction of 1895 without knowing how many mill powers these two corporations were entitled to on March 1, 1895, and how much surplus. We claim that these papers—not on their face, but taken in connection with the other papers in the case—will completely explain the transactions of 1895 with the Crocker and with the George R. Dickinson Paper Company, and that they show that all these corporations paid for the additional water power that they got from their transactions was \$600 a year per mill power, and not \$1,500.

Mr. BROOKS. By our silence we don't want it to be inferred that we agree to any such statement.

Mr. MATTHEWS. Certainly not; but that is our contention. Your contention may be the contrary.

Mr. GOULDING. Contention ought to have some foundation; and it cannot be that papers dated fourteen years before had any reference to any papers that were to be delivered or that shall be delivered in the future. How can they have relation to others papers delivered fourteen years afterwards which also have no relation to papers delivered fourteen years before? It is not enough to say that your contention is that the papers are connected.

Mr. MATTHEWS. That is true, Mr. Chairman; and I am prepared to show now in what way they are connected, if the Commission will take the time now. Let them be marked for identification now, and later I will come to them again in connection with the testimony of another witness.

Mr. MATTHEWS. Take the agreement (mark this for identification, and put your initials on it) under date of July 25, 1881, with the Crocker Manufacturing Company in respect to four mill power. Now the next one, Nov. 7, 1881, Dickinson & Clark Paper Company, in connection with two mill power; and, third, Jan. 14, 1882, George R. Dickinson, in connection with six mill power.

(Papers marked for indentification, "A, S. M. S.; B, S. M. S.; C, S. M. S.," respectively.)

Mr. BROOKS. You had some other matter that you called for, Mr. Matthews.

Mr. MATTHEWS. Yes, I am looking for one of the papers now.

Mr. BROOKS. I thought you better finish that up, so that you wouldn't have to call Mr. Gross again.

Mr. MATTHEWS. Here is this agreement between the Holyoke Water Power Company and Mr. James H. Newton, dated May 11, 1891, that the witness introduced. I don't care to offer it, unless the other side think it is material.

Q. Anything further, Mr. Gross? I understand it is substantially the same as the deed,—I don't offer it,—substantially the same, at least, as the contract subsequently executed between

the Holyoke Water Power Company and the lessees. Anything further, Mr. Gross? A. Yes, sir. On page 246 of the testimony you asked me if I had an agreement that was made with Henry E. McElwain, dated May 31, 1892; and I now produce that agreement.

The CHAIRMAN. Have you anything more?

The WITNESS. Two more, sir.

Mr. MATTHEWS. Two more. I think I will offer them both.

Mr. BROOKS. How is it competent?

Mr. MATTHEWS. Wait a moment: Mr. Gross has some more of the same sort. These are papers referred to in the lease produced the other day; that is all.

Q. Have you anything more of the same sort, Mr. Gross?

(Papers marked for identification, "D, S. M. S.," and "E, S. M. S.")

Mr. MATTHEWS. The order of procedure here is first the recorded leases, then collateral and unrecorded agreements, then the papers referred to in these agreements. These are the agreements in consequence of which the collateral agreements were executed; — preliminary agreements, so to speak.

Q. Anything further in the same line, Mr. Gross? A. You asked me on page 243 if Mackintosh had any agreement as to the 50 per cent. surplus, and I answered no. You asked me if there could have been, and I said no. You asked me if they had any permanent power, and I said no.

Mr. BROOKS. Now, if you have completed what you wish to say, he speaks of page 243. I think that it ought to go in that it is 243 in the stenographic report.

The WITNESS. Please change that, then, page 243 of the stenographic report of testimony taken on April 26.

Mr. BROOKS. That is it.

Mr. MATTHEWS. I have here an agreement made with D. Mackintosh & Sons, the D. Mackintosh Sons & Company, as to surplus water which I here produce.

Mr. GOULDING. What is the date of that?

Mr. MATTHEWS. Dated April 1, 1889, apparently.

Q. Anything further, Mr. Gross? A. On page 248 of the stenographic reports of testimony, taken on April 26, you asked me if I had any other collateral or subsequent papers relating to the Riverside Paper Company, and I answered substantially no, except some votes. I find I was mistaken. There is one other paper relating to the Riverside Paper Company, which I here produce.

(Paper marked for identification, "F, S. M. S.")

Q. This is notice to prevent the acquisition of an easement, isn't it? A. Yes, sir.

Mr. GOULDING. To prevent what?

Mr. MATTHEWS. To prevent the acquisition of an easement of some sort.

Q. Any further papers produced in response to my request, Mr. Gross?

The CHAIRMAN. What is your answer?

A. I think that is all.

Mr. MATTHEWS. Mr. Brooks, I believe you have some papers.

Mr. BROOKS. Yes, sir, but I want to read for a minute or two, if your Honor please.

Mr. MATTHEWS. Certainly.

Mr. GOULDING. You did not offer this paper?

Mr. MATTHEWS. No, sir, I did not.

Mr. BROOKS. Is there anything else?

The WITNESS. There is one that you called for, the title to the stairway. (Producing paper.)

Mr. BROOKS. Well, Mr. Gross, at the present time they say they make no question about that, about our title to any of the land or any of the rights that are contained in this indenture that you produced Friday; and, if they do, they will let us know. So perhaps you had better keep that.

Mr. MATTHEWS. Is that paper anything that would assist the conveyancer who is looking the matter up for us?

Mr. BROOKS. That is simply with reference to the stairway.

Mr. MATTHEWS. If it is anything which will assist the

conveyancer for the City, I shall be glad if you will let us take it.

(The paper was handed to Mr. Matthews.)

Mr. BROOKS. May it please your Honors, I purpose to introduce a plan, together with deeds at the present time, showing the title of the Holyoke Water Power Company along the bank of the Connecticut River next to Holyoke, from the trotting park up to the Northampton line; and, Mr. Sawin being absent on account of serious illness in his family, I am going to endeavor to put it in through Mr. Gross. (Large plan produced.) All this red line down here, including Jones's Point, all the way down the bank of the river to the trotting park, shows the land owned by the Holyoke Water Power Company along the line of the river. The red line does not show all the land they own along the line of the river; but it is made, as I understand it, for the purpose of pointing out more definitely the ownership of land, which really extends backward in many instances. Do I make that clear or don't I?

Mr. MATTHEWS. Does it extend backward along Jones's Point?

Mr. BROOKS. Yes, sir.

Mr. MATTHEWS. How far backwards?

Mr. BROOKS. I cannot tell you. I have the deeds that I am going to put in to show it.

The CHAIRMAN. Do you deny it, Mr. Matthews?

Mr. MATTHEWS. How is that, Mr. Green?

Mr. GREEN. Let them prove it; let them show the deeds.

The CHAIRMAN. Where are your deeds?

Mr. BROOKS. We have certified copies here, but under the law I suppose they should be stamped. Do we need to go to that expense?

The CHAIRMAN. Not so far as I am concerned; besides, unstamped deeds are admissible in the State Courts, I believe.

Mr. BROOKS. I don't know, I am sure.

The CHAIRMAN. At any rate, you do not want all those deeds in, do you?

Mr. BROOKS. If they dispute our title, we have a string

of titles from the trotting park to the Northampton line by deed.

The CHAIRMAN. Mr. Green, can't you look those over?

Mr. GREEN. I think so.

The CHAIRMAN. If you hand those to Mr. Green, Mr. Brooks, I do not think you will have any trouble.

The WITNESS. Here is an index, Mr. Green.

Mr. GREEN. I do not know anything about all these down here; I only looked at these near Jones's Point.

The WITNESS. Let me show you. (Indicating on the plan.) From A to B is one section, B to C another, C to D another, D to E, E to F, F to G, and so on.

Mr. BROOKS. Mr. Gross, are you going to explain that map, or our line of ownership?

The CHAIRMAN. Haven't you already explained the map? Not but that I should like to hear Mr. Gross explain it.

Mr. BROOKS. I don't think I have done it very well.

The CHAIRMAN. Mr. Gross, if you think you can do it any better, go ahead.

The WITNESS. Why, your Honor, I don't think I can do it any better. This map was made by Mr. Sawin, in our office, by taking an original map of 1847, which gave the river line as it then was. Upon a tracing of that map in its outline he laid down the present map of the city of Holyoke, so that you have upon this map, first, the original water line, which is the dotted line, of the river in 1847. You have now the present water line, as it appears here. You have also upon this map these colored lines, which are the lines of the old farm tracks as they existed upon that map in 1847. Then upon that map, which is portrayed upon this, is laid down the map of the city of Holyoke.

By Mr. GREEN.

Q. I see here a dotted line marked "Old line of river," which runs through the Hadley Company's land, and seems to show a little projection here, very close to the Parsons Company line,—a number of lines—I don't quite understand it—two

lines. What is this up here,— the old dam? A. That is the old dam.

Q. The one way back? A. Yes, sir.

By the CHAIRMAN.

Q. When the water comes into the city from the Connecticut, it strikes them all on the same level, doesn't it? A. No. This (pointing to the map) is the second level; here (pointing on the map) is the overflow; here is the first level canal. It comes down here, but at times we have to draw water through this overflow into the second level so as to balance this canal. This water comes down to here, and is discharged through the different wheels into the second level canal, and ordinarily furnishes water sufficient; but, if not, we have what is called No. 2 overflow. Over that the water is drawn into this second level canal, when necessary. This water is drawn down into the second level canal at this point (showing same on map).

Q. Where does the water go from the second level? A. Principally into the Connecticut River. Part of it goes into the third level, passing around here (showing on map). Principally from the second level it goes into the Connecticut River.

Mr. BROOKS. Now, may it please your Honor, I offer a series of deeds, 35 in number, and they can be marked for identification; or my friends can take them, and make an examination of them this evening for light reading.

Mr. GREEN. Thank you; I am obliged to you.

Mr. COTTER. For identification will you give them all one number? I should think one number would suffice.

(The package of deeds was marked for identification, "G, F. H. B.")

Mr. BROOKS. I would like to have that plan marked as in the case.

The CHAIRMAN. No objection is there, Mr. Matthews?

Mr. MATTHEWS. No, sir, we should like to have it marked for our own purposes.

(The plan was marked "Exhibit 235, F. H. B.")

Mr. BROOKS. I think of nothing further that I care to

ask Mr. Gross, unless you think of something that I ought to ask you, Mr. Gross. Yes, there is one thing. Can I ask him about this memorandum he has just shown me, Mr. Matthews?

Mr. GROSS. That I took from the books. That is all with reference to gas meters.

Mr. BROOKS. Before I come to that, let me take Vol. VI. Your Honors will recall that in Boston, some months ago, I asked Mr. Gross with reference to his valuation of the gas and electric plants, upon the hypothesis of the net earnings, and that the net earnings would be steady. And I really had thought that your Honors determined that that wasn't permissible; but, on looking over the record, I find that you didn't. So I purpose to ask the same questions that I then asked, and which, I am frank to say, I thought were ruled out; but the record does not so show it.

The CHAIRMAN. Let the record show it, Mr. Brooks.

Mr. BROOKS. Then I want it to show an exception. I will give you the last that was said. It is on page 369 of Vol. VI., where the Chairman says:—

"It seems to us now—of course, we may get more light—it brings it right down to that very narrow point. To let Mr. Gross testify, we would probably have to create a rule which would enlarge the old rule of petitioners; and I think, perhaps, it would be just as well to give us time to think it over.

"Mr. BROOKS. Mr. Gross can be present at some future time.

"The CHAIRMAN. The chances are we would be at Springfield, and save him the trouble of coming here.

"Mr. BROOKS. I should be very glad to discuss it.

"The CHAIRMAN. (To Mr. Green.) Does that suit your mind?

"Mr. GREEN. Perfectly. It is entirely immaterial to me. I imagine nothing would arise in his testimony which would require any very great research on our part before we open our case."

Mr. COTTER. What was the question, then, Mr. Brooks?

Mr. BROOKS. I will find it here in a few moments. The question is on page 348, and is as follows:—

Q. "Now, Mr. Gross, what, in your opinion, is the fair cash value of the Holyoke gas plant as of December, 1897, or January or February, 1898, situated as it is, where it is, taking into consideration all the surroundings, if the net income therefrom is \$30,000 per year?"

The last that was said about it is found on page 369 of Vol. VI. which I read. So that is the way it was left, you see, as far as the record shows; but I am very confident that later you considered the question, and that it was not admitted.

Mr. COTTER. I recall that we went into Judge Bumpus's private office, and that we discussed it.

Mr. BROOKS. So I understood, but that doesn't seem to have been on the record.

Mr. COTTER. It may not be on the record, but we certainly decided it among ourselves, and made it known to the counsel.

Mr. BROOKS. I am frank to say that I so understood it; but, so that the record may show, I desire to repeat my question now. And I would like to ask the same question with reference to the electric light plant, based upon the theory of net earnings of \$20,000 or \$23,000 per annum.

The CHAIRMAN. So that the record may be right, we exclude it.

Mr. BROOKS. And we will save an exception to your ruling on both questions.

Q. Mr. Gross, have you made investigation to discover what increase there has been in gas customers since January, 1898?

Mr. MATTHEWS. Increase in the number?

Mr. BROOKS. Yes, in the number of gas customers.

The WITNESS. I did to this extent. I went over the books in which is kept a record of the gas meters in use, and I examined those books with the clerk who keeps the record.

Q. And what did you find to be the increase in gas customers?

Mr. MATTHEWS. I object. The records show that.

Mr. BROOKS. Yes. But, if that is so, most of the testimony that you put in should have been excluded.

The CHAIRMAN. You don't want to raise that objection, do you, Mr. Matthews?

Mr. MATTHEWS. I don't know that I do.

Mr. BROOKS. After all, that has gone in without any objection on our side.

Mr. MATTHEWS. We haven't put in anything without objection,—anything of this kind.

Mr. BROOKS. My friend, you have put in again and again testimony from the record, but haven't had the records.

Mr. MATTHEWS. Doesn't this information appear in the Company's returns to the Gas Commission, and in the annual reports of the Gas Commission?

Mr. BROOKS. I don't know. I can't keep track of the Gas Commission.

Mr. MATTHEWS. I waive the objection.

Mr. BROOKS. Will you repeat my question, Miss Powell? (Question read by stenographer, namely): —

“Q. And what did you find to be the increase in gas customers?”

Mr. BROOKS. I will add since January, 1898.

A. With Mr. Adams, the clerk who has charge of the books in which is kept a record of the meters in use. I went over the seven volumes in which that record is kept, of the meters in use Jan. 1, 1901; and I took the totals from each book, and added up the number myself. I did not count the number of meters upon each book, taking that number as it appeared upon the book which Mr. Adams had made; and I found the total to be 3,198.

Q. As of what month and year? A. Jan. 1, 1901.

By the CHAIRMAN.

Q. What was it in 1898? A. I did not take the number from the books of the meters in use in 1898.

By Mr. BROOKS.

Q. Are you able to testify what percentage of increase there has been in the use of meters since Jan. 1, 1898?

Mr. MATTHEWS. How could he do that, if he doesn't know the number?

The CHAIRMAN. Why can't he, if it appears?

Mr. BROOKS. I would like to get the percentage.

Q. Do you remember the testimony? A. In the offer of the Company as contained in the testimony, it was about 2,419 or 2,420, as in use at the time the offer was made, in January, 1898.

By Mr. GOULDING.

Q. What is the total? A. The total in use Jan. 1, 1901, 3,198. The total in use in 1898, as I understand from the offer in the testimony, 2,419 or 2,420.

Mr. BROOKS. That is all I care to ask Mr. Gross.

By Mr. MATTHEWS.

Q. Do you know what the increase in sales of gas has been during that period, measured in cubic feet? A. No.

Q. Look at Exhibit 235, being the plan that you produced this afternoon, and state where, with reference to the original lines of the river, was situated the location upon which the gas works now exist? A. With the exception of a very small portion at the extreme south-eastern part of the gas works plant, it was apparently all under water.

Q. That is to say, substantially all the site now occupied by the gas works was, in 1847, part of the river? A. Yes, sir, part of the river bed.

Q. Part of the river bed, and covered by water? A. Yes, sir.

Q. Did I ask you the last time you were on the witness stand whether the Holyoke Water Power Company were selling land in the market? A. Yes, sir.

Q. I asked you that, and you answered it? A. Yes, sir.

Q. You said yes, did you? A. Yes, sir.

Mr. MATTHEWS. That is all.

By Mr. BROOKS.

Q. Do I understand you to say, Mr. Gross, that substantially all this gas site was, in 1847, covered by water, all covered

by water at all times? A. I understood the inquiry to be as to the gas plant, and not as to the holder on Bridge Street.

Q. That is true. That is, as to the gas plant near the river? A. As to the gas plant, I understand from the maps,—the map that I saw of this tract of land, the large tract of land,—in 1847, that the greater portion, substantially all of the property now covered by the gas plant, was outside, was beyond the river's bank.

Q. As to how much of the year, at what periods of the year, any part of the present site was originally covered by water, you don't know? A. No, sir, because that would depend upon the seasons of the year, I should assume.

By Mr. MATTHEWS.

Q. When you say beyond the line of the river, you mean in the river? A. In the river,—inside the river banks, yes, sir.

Q. Within the river banks? A. Yes, sir.

JOHN S. McELWAIN, *sworn*.

Direct examination by Mr. GREEN.

Q. Your name is James S. McElwain? A. John S.

Q. John S. McElwain? A. Yes, sir.

Q. You live in Holyoke, Mr. McElwain? A. Yes, sir.

Q. For how many years have you lived in Holyoke? A. Ever since 1867.

Q. What has been your business? A. I have been in the paper business.

Q. And with what paper mills have you been connected?

A. With the Parsons Paper Company for twenty-five years, with the Nonotuck Paper Company since its existence.

Q. How long is that? A. Well, since 1882. And with the Linden Company since it started, until these companies were sold out to the American Writing Paper Company.

Q. The Parsons Paper Company the one that is sometimes called Parsons Paper Company No. 1, to distinguish it from the Paper Company No. 2? A. Yes, sir.

Q. It is the old original Parsons? A. Yes, sir.

Q. It is on the first level canal? A. On the first level.

Q. What was your connection with that? A. I was secretary of the company until Mr. Parsons died. After that I was agent for the company.

Q. As agent of the company, did you have the management and control of the mills, business management? A. Yes, sir.

Q. The Parsons? A. The agent had very large powers, the right to buy and sell, to hire help and discharge them, and the general management of the business.

Q. Did you have anything to do with the power? A. With the power?

Q. Yes, the water power; that is, were you familiar with the rentals paid? A. Certainly.

Q. I have assumed that you used water power. I believe it appears in this case that you did there. A. Yes, sir.

Q. What kinds of power did they use at the Parsons?

Mr. BROOKS. We object to that, may it please your Honors. I suppose the indentures show what kinds of power they used. It all must be a matter of indenture. It is a question of permanent, non-permanent, common, and surplus. It all comes in as a matter of indenture ; it must.

Mr. COTTER. Is it conceded that this does appear by some instrument ?

Mr. GREEN. Why, I have no doubt that the power they used was indentured ; that is, I believe they had some surplus that was not ; I don't know about that. I suppose they had some permanent and some non-permanent power.

Mr. COTTER. That being the case, it seems to us that you ought to produce the instruments, so long as objection is made.

Mr. GREEN. Well, if that is so, I think I have the indenture here for non-permanent power. I think the indentures of the Nonotuck, the Parsons Paper Company No. 1, for non-permanent power, and I think the Parsons Paper Company No. 2, are already in evidence,—I am not sure.

The CHAIRMAN. I am very certain they are.

Mr. GREEN. Well, I know the Parsons Paper Company No. 2 is.

Mr. BROOKS. Do you expect to control what has already gone in as to the kinds of power used on the various level canals ?

Mr. GREEN. What do you mean by control ?

Mr. MATTHEWS. I desire to show this gentleman has used the various kinds of water power used in this case.

Mr. BROOKS. I agree the various mills have used water power.

Mr. COTTER. Bearing on his qualification ?

Mr. GREEN. Yes, sir, that is all at present.

Mr. COTTER. Of course, as bearing on his qualification, for that purpose alone. It would be competent for you to make inquiry as to what experience he has had in the use of power. The question you asked was different.

(Question read : "What kinds of power did they use at the Parsons ?")

Mr. COTTER. If that appeared by an instrument, you ought, regularly, to introduce the instrument. You must ask him what experience he has had before he can state that. Ask him what kind of power the particular mill has used, and it is now conceded that that appeared by an instrument in writing.

Mr. GREEN. I assented to the fact that there was such an instrument. I was asking him what kinds of power he has used there.

Mr. COTTER. If you ask him what experience he has had with power, I don't think there will be any objection made.

Q. Well, in connection with your position as agent of the Parsons, what experience had you there with water power? A. Well, we had permanent power and surplus power.

Q. While you were there did you have experience with any other forms of power?

Mr. BROOKS. Well, isn't this, may it please your Honors, all a matter of indenture? If he is going to dignify these papers by the name, I—

Mr. COTTER. For anything further than a description of it in his experience, of course, we require the instrument itself.

Mr. BROOKS. Yes, sir.

Mr. COTTER. But, when it comes to asking what experience he has had with this mill or any other, we think it is always proper for the witness to state his experience.

Mr. GREEN. The terms permanent and non-permanent have been used throughout the case as a general designation—

The CHAIRMAN. The question is whether he used the permanent.

Mr. GREEN. I understand the objection is withdrawn.

A. At the old Parsons,—I believe we had no non-permanent there.

Q. Was your experience at the Nonotuck subsequent to your experience at the Parsons? A. Yes, sir.

Q. And what was your connection with the Nonotuck, what was your position there, what had you to do with the mill? A. I was agent there for a while, and after that president.

Q. President of the company? A. Yes, sir.

Q. And did the Nonotuck use water power? A. Used water power.

Q. It is on the third level canal, I believe, of the Holyoke system? A. Yes, sir.

Q. What experience had you with water power there? A. We used permanent water power there and surplus water power.

Q. And you spoke of the Linden. This is the Linden that is on the first level canal? A. Yes, sir.

Q. What was your connection with the Linden? A. I was president of that company.

Q. And what experience with water power did you have in connection with the Linden? A. We purchased non-permanent power for the Linden.

Q. Did you have anything to do with the Parsons No. 2? A. Yes, sir. I was agent for the Parsons No. 1 at that time, and made the purchase for the Parsons No. 2.

Q. Have you personally negotiated with the Holyoke Water Power Company for the purchase of non-permanent power? A. I have, yes, sir.

Q. And did you conduct the negotiations which led up to the sale of the Linden Land and Water Power, which is on the first level canal? A. Yes, sir.

Q. And with whom in connection with the Water Power Company did you do your business? A. For the Linden?

Q. Yes. A. With the president, Gideon Wells.

Q. And did you personally conduct the negotiations with the Holyoke Water Power Company which led up to the purchase of the land and water power where the Parsons Paper Company No. 2 is? A. Yes, sir, I did.

Q. And that was all non-permanent power, I believe? A. Yes, sir, that was all non-permanent.

Q. Have you had experience with water power in connection with any other plant except the Parsons No. 2, Nonotuck, and Linden? A. Why, I had an interest. I was treasurer of the Valley at one time, and knew something of the management of that power in connection with the directors of Parsons No. 1.

Q. With whom did you conduct your negotiations for the purchase of the land and water power of the Parsons Paper Company? A. You mean the Parsons No. 2?

Q. Yes. A. With Mr. Clement Herschel.

Q. Mr. McElwain, what, in your opinion, in January, 1898, was the value of non-permanent water power on the first level canal in Holyoke?

Mr. BROOKS. Well, wait a moment. I object to the question.

The CHAIRMAN. You may cross examine him, Mr. Brooks, if you want to.

Mr. BROOKS. What has there been in the direct examination, may it please your Honors, with all due deference, to show his knowledge of market value along the first level canal?

Mr. COTTER. Your objection is as to his qualification?

Mr. BROOKS. Yes.

Mr. COTTER. Want of experience?

Mr. BROOKS. Certainly; his qualification as to expressing market value. If he knew the going price, it might be one thing.

Mr. COTTER. Don't you care to examine him on the subject?

Mr. BROOKS. Yes, if your Honor thinks it is of any materiality to the case.

Mr. COTTER. Well, you had better.

By Mr. BROOKS.

Q. The only experience you had, Mr. McElwain, with reference to the value—knowing anything with reference to the value of water companies—is your own personal experience in negotiating and making the purchases that you have already spoken of? A. That is all in Holyoke, yes, sir.

Q. You have made no tests to determine the relative costs of steam and water power? A. I have not.

Q. And you had no experience in that line— A. I have as to—tests, no. Of course, I have used more or less steam power.

Q. I understand. A. No.

Q. But you never have made any tests to discover the relative cost and efficiency of the one power and the other? A. I have not.

Q. No. Now you say you purchased for the Parsons No. 2 some land and some water power on the first level canal. Am I right? A. Yes, sir.

Q. And that is your only experience with reference to knowing anything about market value or cost of water power along the first level canal? A. My only experience, that and the Linden.

Q. Well, the Linden is on the first level? A. On the first level.

Q. Now when was the Parsons No. 2 purchased? A. In 1888.

Q. In 1888. What time in 1888? A. Well, I don't know that I can tell. I should think in May. I am not sure about that.

Q. So that it is fair to state that your only knowledge with reference to the cost or value or price of water power in the city of Holyoke is derived, so far as the first level is concerned, is derived from your experience in the negotiations of Parsons No. 2 privilege, and in the negotiations and purchase of the Linden privilege; am I correct about that? A. Yes, sir.

Q. And when was the Linden purchased? A. In 1892.

Q. In 1892, yes. And that is the last purchase that you have any knowledge of? A. Yes, that is the last.

Q. I beg pardon? A. That is that last, yes, sir.

Q. The Nonotuck privilege you did not purchase? A. I did purchase the Nonotuck.

Q. Well, that you purchased from whom? A. I think from Mr. Herschel, but I am not sure.

Q. Did you? A. I am not sure.

Q. And when was the Nonotuck — That is on the third level? A. That is on the third level.

Q. When was that purchased? A. In 1832, I think.

Q. In 1882? A. 1832.

Q. The Valley, you had nothing to do with the purchase of the Valley? A. No, sir.

Q. That was purchased many, many years ago? A. Several years ago.

Q. Perhaps thirty or more years ago? A. I think so.

Q. Yes. A. Yes, I think so.

By Mr. GREEN.

Q. I think I brought it out that you were connected with the Linden in some capacity after the purchase? A. Yes; I was president of the company up to the time it was sold to the American Writing Paper Company, yes, sir.

Mr. COTTER. He may answer the question.

Mr. BROOKS. Save our exception as to his qualification.

Q. What, in your opinion, was in January, 1898, the fair market value of non-permanent water power in the city of Holyoke on the first level canal? A. Well, I don't see why—

Q. Just give your opinion without the reason. A. The same as has been paid for it in years previous.

Q. And what is that? just the figures? A. \$600, with the \$4,500 bonus.

Q. The bonus, including what? A. Including the land, of course, to build on.

Q. How much? A. Enough to build a mill on suitable for the purpose for which the water is sold.

Q. What has been the nature of the paper mills that you have been connected with, whether fine writing paper or otherwise, or whether different kinds? A. The Valley and the Parsons and Linden all made fine writing paper, and the Nono-tuck made engine-sized paper.

Q. You have looked over a plan showing the size and shape of the land offered to the City for their electric light station? A. Yes, sir.

Q. How many mill power of water, in your opinion, could be utilized in connection with that piece of land for paper mill purposes?

Mr. BROOKS. Well, now —

The CHAIRMAN. I don't understand the petitioners claim that this would be where they would put up a building for paper mill purposes, but other mills for other purposes. I don't see why you offer that.

Mr. BROOKS. I think, perhaps, in fairness, I ought to state that, in view of some testimony that has been already given here, we may present further testimony upon that question as to whether or not it is fit for a paper mill.

The CHAIRMAN. All right.

Mr. BROOKS. But I don't know how he is capacitated to express an opinion on it.

Mr. COTTER. Do you wish to cross examine, Mr. Brooks?

Mr. BROOKS. Yes, sir.

By Mr. BROOKS.

Q. Mr. McElwain, you are not a millwright? A. No, sir.

Q. Nor an architect? A. No, sir.

Q. Have you ever studied this plot of land down there? A. I have seen the land.

Q. Of the electric plant? A. I have seen the land.

Q. Have you ever erected a mill yourself of which you were the engineer, the erector? A. I always knew how much land we needed.

Q. Answer my questions, if you please. Were you ever the architect of a mill? A. No, sir.

Q. Have you ever endeavored to place a mill upon a plot of land of the size of the one that is here in question, the electric light plant? A. No, sir, I never did.

Q. Do you know how many square feet are contained in that? A. I do not.

Q. Do you know approximately? A. I do not know.

Q. Have you ever been down and made an examination of the site? A. I know where it is; I have not —

Q. Have you ever made an examination of the site, was my question? A. Not especially.

Q. What study have you given the question, not knowing the area of the land that there is there, as to whether a paper mill

can be erected upon that plot of land? A. I know the size; I saw the size of the land, and could see at once —

Q. I am asking you now what study you gave to it. You saw the size of the lot; what else did you see? A. I studied to see whether we could place a mill,— whether a mill could be placed on that lot of ground.

Q. Did you look at the hydraulic plant — make a study of that — that is connected with this site? A. No, I did not.

Mr. BROOKS. I submit that this man has no competency to express an opinion on whether a mill building can be put somewhere.

Mr. GREEN. I have a little plan that Mr. McElwain had, and I asked the stenographer to mark it. I would like to hand it back to him. It shows the shape of the land and has the number of feet on it.

By Mr. GREEN.

Q. Assume there is 40,000 feet of land all told, of which 28,000 to 30,000 — say, about 30,000 — might be built upon, of the shape that you have in mind.

Mr. COTTER. He may answer.

A. Let me understand the question, please.

Q. Now how many mill power, at the outside, could, in your opinion, be used in connection with that piece of land as described? A. To advantage, not any.

Q. To advantage, not any? A. Not any,— for paper.

Q. For paper mill purposes? A. I would not take it as a gift.

Mr. BROOKS. Well —

Mr. COTTER. That ought to be stricken out.

Mr. BROOKS. May it please your Honors, I ask that that anxious remark be put out of this case.

Mr. COTTER. Certainly. Strike that out, Mr. Stenographer.

Q. When you spoke of \$600, I don't know but you stated — you mean \$600 a year rental? A. I would like to explain that last remark.

Mr. GOULDING. There is no need of it ; the explanation is obvious enough.

Q. Just a second. The \$600 that you mentioned was \$600 a year rental? A. Yes, sir.

Q. Coupled with \$4,500 bonus for sufficient land? A. Yes, sir. If it is admissible, I should like to explain —

The CHAIRMAN. Explain what?

The WITNESS. Explain why I would not want that land.

Q. You may explain, I think, properly why you think no mill power could be utilized to advantage for paper mill purposes. A. Because there is not room after putting the engine room on that lot of ground — there is not room to run a paper machine the other way.

By Mr. GOULDING.

Q. The other way, north and south? A. I mean east and west. There is no room to put in a paper machine there at all in a proper manner.

By Mr. GREEN.

Q. I show you in Vol. VIII., Mr. McElwain, the plan opposite page 306. See if you recognize inside of the lines there the lot that you have in mind. A. This is the canal?

Q. This is the canal ; this is the upper level canal, this is the second level canal, this is the George R. Dickinson over here. The land is contained inside of these lines. The distance through there is —

Mr. BROOKS. The dimensions are all on that plan, Mr. Green.

Q. If you will explain to the Commission what you referred to on this plan. A. After the engine room is put across here in front, as they put them, next to the upper level canal, then there is not room back of that to put in a machine for any kind of paper mill that I have ever been connected with.

By the CHAIRMAN.

Q. What distance is it from there? A. I will ask Mr. Sickman, because he will give it exactly.

Mr. GREEN. Mr. Sickman, will you give it?

Mr. BROOKS. Well —

The CHAIRMAN. Never mind. I withdraw the question. We understand your theory, I think.

The WITNESS. For that purpose it is not desirable. I should not consider it had any value.

Mr. GREEN. The difficulty of measuring is that the scale is reduced. The scale is not the same as the large map.

Mr. BROOKS. Well, he says it is not big enough.

Mr. GREEN. That is all.

Cross examination by Mr. BROOKS.

Q. Mr. McElwain, what is the market value of this water power at this plant per mill power for producing electricity?

A. That I have no knowledge of.

Q. You cannot tell us anything about it? A. I cannot tell you.

Q. You were simply considering the value of this water power from a paper mill standpoint? A. Yes, sir, simply for that.

Q. And what it would be worth for any other purpose you do not know? A. No, sir, I do not.

Q. I see. Well, now you say, as I understand you, in substance, that you do not see why it is worth any more than it was some years ago, when you were paying — you paid \$4,500 bonus and \$600 rental? A. So it seems to me.

Q. You have a stock farm? A. Yes, sir.

Q. And you raise trotters? A. Raise what?

Q. Trotters — race horses? A. Certainly.

Q. Would you say that your race horses that you raise this year are worth no more than those that you raised ten or twelve years ago? A. They are not; I am sorry to say they are not worth nearly as much.

Q. Well, supposing you got a rattling good one this year: is he worth as much as one you raised ten years ago, or the ones you raised ten years ago? A. A rattling good one is always valuable.

Q. You claim you have been raising some rattling good ones, don't you, in the last year or two? A. But I don't develop them.

Q. Of course, we won't consider that you are bragging about your horses, you know; but you claim, don't you, that within the last three or four years you have reared one or more rather valuable horses? A. Very good; yes, sir, very good.

Q. And you consider that you have improved, don't you, in the past few years in the result of your breeding? A. So far as my stock is concerned, yes, sir.

Q. And the better the result, the better the price? A. Certainly.

Q. So it comes to this: you would not value a horse to-day upon the theory of what its value was ten years ago, would you? A. Well, they are worth no more now—

Q. Excuse me a minute. You would not put a value upon a horse to-day by comparison with what you could buy a horse for ten years ago, would you? A. Well, I suppose there would be some comparison in the value.

Q. Would you, Mr. McElwain, if you went out to buy a horse—"Well," you would say, "ten or fifteen years ago I could buy a horse as good as this for so much; therefore, that will be what will fix my price for this horse"? A. No, of course not.

Q. No, I thought not. Mr. McElwain, when you considered the value of this water power, you took into account the days of restriction, didn't you? A. Certainly, yes, sir.

Q. And you took into consideration the steam that you had got to use,—the auxiliary steam? A. Certainly.

Q. And, in fixing your market price of \$600 per annum rental, you fixed it upon the theory that there had got to be a certain number of days of restriction, when you would have to run by auxiliary steam? A. Yes, sir.

Q. And that was substantially one of the main factors in your arriving at that valuation; am I right? A. I think so, yes, sir.

Q. And for the paper mill business? A. Yes.

Q. And how many days of restriction did you have in mind?
A. From twenty-seven to forty.

Q. Yes. You took from twenty-seven to forty days of restrictions in mind where you would be compelled to run by steam auxiliary? A. Yes, sir.

Q. And that, in your opinion, decreased the value of the water power? A. Yes.

Q. What? A. Yes, sir.

Q. And very considerably? A. Certainly.

Q. Well, now for a moment or two more. Is there such a concern as the Carew Paper Company that takes water from the Holyoke Water Power Company? A. I think they call it Carew yet.

Q. You are acquainted with that company? A. I know of it.

Q. Do you know how many powers of water they use at that mill? A. I do not.

Q. Are they a fine writing-paper mill? A. Yes, sir.

Q. Do you know how much area their buildings cover? A. I do not.

Q. Well, if you found out, Mr. McElwain, that the area of their buildings was 15,575 square feet, and that in their manufacture they used substantially 18 mill powers of water, would you want to change your mind about this plant and its availability? A. Well, that is not the fact, is it,—18 mill powers?

Q. Well, I am counting in surplus.

Mr. COTTER. The better way is to answer the question.
A. I should not, no, sir. I should not want to change my mind.

Q. You would not want to change it? A. No, sir.

Q. Did you know that the area of their buildings amounted to about 15,575 feet? A. I did not know that.

Q. Assume for a moment that the area of their buildings is 15,575 feet, and that they use rising 10 mill powers of water, would you want to change your mind as to whether or not a paper mill could be put upon this site? A. I should not, no, sir.

Q. You would stick to it? A. I don't know the shape of their land.

Q. Well, I am taking your knowledge of it into consideration,—right over there on the river bank. Now I want to ask you, do you know that the Carew Company use steam all the time besides their water power? A. I do not know since their reconstruction what they do do.

Q. You cannot tell about that? A. I do not know.

Q. Mr. McElwain, you sold out to the American Writing Paper Company? A. Yes, sir.

Q. Your interest? A. Yes, sir.

Q. How much was your water power put in at to the American Writing Paper Company, do you know? A. I cannot tell. It was not put in separately.

Q. How much was it, all put in,—all the water power? A. I do not know.

Q. Can you approximate it? A. I could not, no, sir.

Q. Who was it that was the architect of your various paper mills? Mr. Ashley B. Tower? A. Ashley B. Tower, yes, sir.

Q. And he is an authority, is he not? A. He is an authority.

Q. In the paper mill world and a paper mill architect? A. Yes, sir.

Q. Is there anybody in the country, so far as you know, that is his superior? A. For that purpose, I think not.

Q. Well, if you were advised by Mr. Tower that a mill could be built upon this site, and he exhibited to you a plan and specifications that would exhaust or take all this 16 mill powers and produce profitably, would you still be of the same opinion? A. I should not want to handle the stock in the mill.

Q. Of course, I did not ask you to do that. A. On that — well, if you will excuse me, I will listen to your question once more.

(Question read.)

A. I think I should.

Q. Do the paper mills usually run their machines by steam?

A. Usually, yes, sir.

Q. That is in addition to the water power that they use? A. Yes, sir, usually.

Q. And is that true at the Carew Company, so far as you know, that they run their paper machines by steam? A. I do not know.

Q. You cannot say as to that? A. No.

Q. But didn't they used to do that when you knew them? A. They did not formerly, no, sir.

Q. But you say it is usual in writing mills? A. It is very common now, yes, sir.

Q. To run the machines by steam in addition to the water power that they use? A. Yes, sir.

Q. I see. When did you cease to be connected with the Parsons Paper Company? I do not know but you gave the date. A. In 1892.

Q. 1892? A. I think in January, 1892. I think so.

Q. Did you give me the date of the purchase by you of your interest in the Nonotuck Paper Company? A. Purchase of —

Q. Any interest that you had in the Nonotuck Paper Company? A. Well, I had interests in it from the commencement.

Q. Yes, I so understand it. What I am getting at — what was the date of the inception of the Nonotuck Paper Company? A. I think that was in 1882.

Q. 1882? A. 1881 or 1882.

Mr. BROOKS. I think that is all.

Mr. GREEN. That is all, Mr. McElwain.

(Counsel for petitioner having inquired whether the Commissioners would sit after four o'clock to-day, the Chairman asked counsel for the City how long it would take to put in their remaining evidence. Mr. Matthews stated the remaining matters which he desired to introduce, and requested that the Commissioners adjourn to Boston when the rebuttal testimony was to be put in, that the experts for the City residing in Boston might be present.)

Mr. GREEN. One further suggestion to our friends on the other side. If we should discover anything in regard to this

title that we desire to raise, it can be raised at any time during the rebuttal by giving them notice.

The CHAIRMAN. Yes.

Mr. GREEN. It is a detail that we are having attended to outside.

The CHAIRMAN. Wouldn't it be well to make an effort to finish this afternoon?

Mr. BROOKS. Evidently, you are not going to; and, if I may be allowed a word, it is this—

The CHAIRMAN. Hold on, Mr. Brooks, just a minute. There has been something said about going to Boston. It would be more convenient. Now we certainly do not want to come here to-morrow morning for half an hour on this evidence, all of which can be put in at any time, and then have to stop a day for that purpose. If you are going to Boston to go on with your rebuttal, hadn't you better close it up this afternoon, if you can,—if you cannot, close it up at Boston?

Mr. BROOKS. I would like to say a word with reference to that. I am having a good deal of difficulty in getting the details of our rebuttal ready, because of the lack of printed testimony. If we go to Boston to-night, to go on to-morrow morning, it simply takes a night of work away from us, because we cannot get into Boston before ten or eleven o'clock. I have been spending my evenings pretty well, and, so far as I could, any intermission that we had, endeavoring to get ready our rebuttal; and I certainly should like to-night to go on with it, and I should be very—

The CHAIRMAN. (To Mr. Matthews.) You will have to send for your experts.

Mr. BROOKS. I do not want to raise any cavil with reference to where we shall hear this case,—it is immaterial to me,—but I cannot be ready to go on with the rebuttal at nine o'clock to-morrow morning in Boston.

The CHAIRMAN. Now, gentlemen, if this case is not closed to-night, these incidentals will grow in number. Everybody knows that in the trial of a case so long as this. We all know that. If it can be closed up to-night, let us close it up;

and, if the respondent wants to put in any more, we will let him,— we shall not shut him off. But we want to know that this case is closed by the respondent; and, if you say it is better for you to go on in rebuttal to-morrow here, we will stay here, so far as I can see. We conclude to-day to go on until half past four o'clock.

WILLIAM H. SNOW, *recalled*.

Cross examination by Mr. MATTHEWS.

Q. Mr. Snow, has the Holyoke Water Power Company made any additions or extensions to its gas works since Jan. 8, 1898? If so, what?

Mr. BROOKS. Will you please read the question?

(Question read.)

Q. Meaning by gas works the entire plant, manufacturing plant, and distribution system.

Mr. BROOKS. I don't object to that question, but can Mr. Snow give you the list of them? Have you notified him to be prepared?

Mr. MATTHEWS. I don't know that there are any.

Q. Are there any, Mr. Snow? A. In the first place, there are a few feet of pipe, main pipe.

Q. Added? A. Yes, sir.

Q. Is that all. A. Nothing at the works.

Q. What? A. There have been no extensions at the works.

Q. And in the distribution system only a few feet of main?

A. Yes, sir.

Q. How many feet of main? A. 1,340 feet.

Q. What size pipe? You have it there. Are these services or mains? A. These are mains: 66 feet of 1 inch pipe, 144 feet of 1¼ inch, 62 feet of 1½ inch, 355 feet of 2 inch, and 713 feet of 6 inch.

Q. Have there been additional services put in? A. Yes, sir.

Q. How many? A. I have the services up to Jan. 1, 1900, not since.

By Mr. BROOKS.

Q. Jan. 1, 1900, or 1901? A. 1901.

Mr. BROOKS. I understood you to say 1900.

The CHAIRMAN. He did say that.

By Mr. MATTHEWS.

Q. How many additional services were put in between Jan. 8, 1898, and Jan. 1, 1901? A. 179.

Q. Any additional meters for that period of time? A. Yes, sir.

Q. I mean installed? A. Yes, sir.

Q. How many? A. 741.

Q. Now you only put in 179 additional services. How do you get 741 meters? A. Well, sometimes there are as many as 24 meters that go on one service pipe.

By Mr. BROOKS.

Q. In tenement blocks? A. In tenement blocks.

By Mr. MATTHEWS.

Q. As many as how many? A. 24 meters on one service pipe.

Q. Were any of those meters put in to replace other meters?
A. These are all new customers.

By Mr. BROOKS.

Q. That is the 741? A. Yes, sir.

By Mr. MATTHEWS.

Q. Have you got the details for those additions? A. The different sizes of meters?

Q. The different sizes of meters, the names of the customers, the location of the meters, and the location of the service pipes and mains? A. I have not.

Mr. MATTHEWS. I don't care to ask any more questions.

Mr. BROOKS. I don't care to ask anything, Mr. Snow.

Mr. MATTHEWS. Are you going to have many questions to ask Mr. Sickman, Mr. Brooks?

Mr. BROOKS. I think we shall have quite a number.

The CHAIRMAN. We will go on until half-past four, gentlemen.

Mr. MATTHEWS. Mr. Sickman, will you take the stand?

Mr. GREEN. I understand there is a question left open

before the Commission, and we would like to bring it up at this moment.

The CHAIRMAN. We don't care to hear it at this moment, if it has anything to do with any papers.

Mr. GREEN. It is the deed that I referred to, and the contract. It is so late in the hearing of the case that I should like to know what view the Commission take of it. It was the deed of the Appleton transaction.

The CHAIRMAN. We can't pass on it. I don't remember anything about it. I would much prefer to hear testimony this afternoon.

Mr. GREEN. I want to have it brought up before we close our evidence, your Honor.

The CHAIRMAN. Bring it up later, if you want to, before you close.

Mr. GREEN. Then I will make an offer of these papers, and have them marked, so as to be sure to have them in. There are so many papers that it is pretty hard to keep them all in mind. These are two deeds to the Riverside, and an agreement, and the deed of land from the Riverside to Mr. White.

(Marked for identification "C, D, E, and F, M. A. P.")

Mr. GREEN. I should like to state why I want these papers, if your Honors will permit me.

The CHAIRMAN. I don't care to hear it to-night.

Mr. GREEN. Then I will have it on the record what the papers are.

One is a deed of the Holyoke Water Power Company to the Riverside, recorded in Hampden Registry of Deeds, Book 503, page 533, dated Aug. 1, 1892.

Another, from the Holyoke Water Power Company to the Riverside Paper Company, recorded in Hampden County Registry of Deeds, Book 579, page 109, dated Dec. 1, 1897.

One from the Holyoke Water Power Company to the Riverside Paper Company, recorded in Hampden Registry of Deeds, Book 566, page 321, dated Dec. 1, 1897.

And a contract for the sale of the last described land, exe-

cuted from the Riverside Paper Company to the Smith & White Manufacturing Company, under date of Jan. 20, 1898.

And there is a deed which I desire to offer in that connection. It is among papers which have been mislaid, apparently. It is for the sale of that same land in accordance with the agreement of sale,—a sale from the Riverside to the Smith & White Manufacturing Company, in accordance with the terms of the agreement. I offer those in evidence, and desire to be heard some time before the close of our case, on the question of why they should be admitted.

The CHAIRMAN. We will come in at ten o'clock tomorrow morning; and I hope, gentlemen, that you will have your papers in such a condition that we can go forward without having to stop.

Mr. MATTHEWS. We shall be in condition, if the Company produces the copies of the book entries and the vouchers which they were going to let us have.

Mr. BROOKS. If the Company said they would let you have them, they will do it. I will say that.

Mr. MATTHEWS. I don't doubt that they will, Mr. Brooks, but the Chairman asked the question. We have given them a written memorandum of what we want.

(Adjourned to Wednesday, May 1, 1901, at 10 A.M.)

SEVENTY-THIRD HEARING.

SPRINGFIELD, Wednesday, May 1, 1901.

The Commissioners met in the Court House at 10 A.M.

Mr. GREEN. While we are waiting for Mr. Sickman, I will offer this table, which was prepared by Mr. Sickman and handed in yesterday. Mr. Winchester gave it to me.

The CHAIRMAN. Have you looked at it, Mr. Brooks?

Mr. GOULDING. There is some figuring in pencil of the averages. I don't know whether they are correct or not.

Mr. GREEN. I figured the averages in pencil, and I suggest they might go in, subject to correction. They can be changed easily enough. I think they are correct. I figured them quite carefully.

(The table was marked "Exhibit 236.")

[EXHIBIT 236.]

REBATES NON-PERMANENT POWER FIRST LEVEL CANAL FROM JAN. 1, 1893, TO DATE.

	Parsons Paper Co. No. 1.		D. Macintosh & Sons Co.		Geo. R. Dickinson Paper Co. 6 M. P. Day powers.		Geo. R. Dickinson Paper Co. 1 M. P. 24-hour.		Geo. R. Dickinson Paper Co. 1 M. P. 24-hour.		Parsons Paper Co. No. 2.		Linden Paper Co.	
1893 June 30 Dec. 31	23½	0	20½	7	17½	5½	23½				12½	5	17½	6
	0	7	0	0	0	0	0				0	0	0	6
1894 June 30 Dec. 31	43½	8½	49½	49½	38½	38½	38½				36½	36½	44½	44½
	25	2.75	27½	0	18½	0	0				16½	0	17½	0
1895 June 30 Dec. 31	45½	13½	58½	86½	42½	61½	61½				32½	49½	33½	50½
	0	0	0	0	0	0	0				0	0	0	0
1896 June 30 Dec. 31	12½	0	4½	4½	3½	3½	3½	2½	2½	2½	2½	2½	2½	2½
	11	0	11	0	8½	0	0	5½	5½	5½	5½	5½	5½	5½
1897 June 30 Dec. 31	5½	14½	20½	31½	14½	23½	23½	15½	15½	15½	9½	15½	9½	15½
	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1898 June 30 Dec. 31	18½	0	17½	17½	11½	11½	11½	7½	7½	7½	6.85	6.85	7½	7½
	3½	2½	4	0	4½	2	0	2½	2½	2½	1½	1½	3	1½
1899 June 30 July 26 Dec. 31	49½	27½	74½	78½	62½	68½	68½	51½	49	53½	47½	49½	71½	75½
	16½	1½	15½	0	14½	0	0	11	11	9½	9½	14½	14½	14½
1900 June 30 Dec. 31	31	6	37	52½	28½	42½	42½	32	21	32	21	30½	24½	38½
	24	24	0	0	0	0	0	0	0	0	0	0	0	0
1901 June 30	46.57	—	43.34	—	—	34.19	—	21.98	—	22.25	—	26.08	—	30.14
	—	—	—	—	—	—	—	—	—	—	—	—	—	—
AVERAGE	—	—	—	—	—	—	—	—	—	—	—	—	—	—

I bring up, while we are waiting for Mr. Sickman, the question I started to raise last night.

The CHAIRMAN. Do you mean the Appleton case?

Mr. GREEN. Yes.

The CHAIRMAN. I shall have to take the papers and look them over properly. You can put that in any time before the end of the rebuttal, if it is admissible.

Mr. GREEN. Does your Honor understand the ground on which I offer it?

The CHAIRMAN. No, I don't; and I don't care to understand it until I can have an opportunity to examine the papers. How long a time will it take you to discuss it?

Mr. GREEN. It is entirely satisfactory to me to leave it that way.

Mr. MATTHEWS. Will the same rule apply to the Exhibits A to F?

The CHAIRMAN. Yes, I should like to have a chance to look over them.

Mr. MATTHEWS. They are not exhibits,—the papers marked exhibits by Miss Swift or Miss Powell yesterday,—they are A to F, I understand. Those papers and the papers of the Appleton Riverside transaction we were to have some subsequent opportunity to present to the Court, with our argument on the admissibility of them.

The CHAIRMAN. That is right. What I want is an opportunity to read the exhibits that were put in last week. There were quite a number. I have not looked them over in connection with these that were offered yesterday, and have not had an opportunity to read over the Appleton evidence; and it has entirely gone out of my mind. It has been referred to half a dozen times, and I can't seem to recall the facts.

Mr. MATTHEWS. We desire an opportunity to state the grounds under which we claim they are admissible in evidence.

The CHAIRMAN. That is it.

Mr. BROOKS. I would like to call attention of the Commission to testimony of day before yesterday, and remarks that were made, which I noticed for the first time last night. While

I should be very glad under ordinary circumstances to be credited with a speech of Mr. Matthews, the sentiments in the speech which he made on page 392 of Vol. LXXI. (Vol. XIII., pages 480-1, of the printed report) are so outrageous that I don't care to have them credited to me. Instead of Mr. Brooks that made this speech, I want it Mr. Matthews.

The CHAIRMAN. If counsel don't want to use those papers that were put in last Friday, with the papers that were put in yesterday, and marked, I should like to take them to Boston, and look them over.

Mr. BROOKS. Do you mean by that the collateral agreements that came in through Mr. Gross? I don't care for them, except that I may want them for a few minutes to-day.

Mr. MATTHEWS. Now, Mr. Brooks, the copies of entries from the books of the Company. I want to get in these other papers first.

The CHAIRMAN. Mr. Green, let me have the Appleton papers. Who testified on this? Didn't you call some witnesses?

Mr. GREEN. (Handing papers to Chairman.) No, I don't recall any testimony. Do you, Mr. Matthews?

Mr. MATTHEWS. On the Appleton matter?

Mr. GREEN. Yes.

Mr. MATTHEWS. Yes, there was some testimony in the case, Mr. Chairman, in Vol. V., relating to the leases.

The CHAIRMAN. Wasn't there some quite lately, the other day?

Mr. GREEN. I don't think so.

The CHAIRMAN. You want to show the value of the land, don't you?

Mr. GREEN. No, that isn't the primary thing.

The CHAIRMAN. State what you want to show.

Mr. GREEN. Mr. Appleton, you will find in his testimony, stated that he bought non-permanent power, and paid for it at the rate of \$4,500 a mill power. He also states that, when he bought that non-permanent, he took, in addition, two permanent day mill powers and a tract of land. We desire to show that, substantially as part of the same transaction, within a few

weeks of the date of the sale, that that land was sold at a certain price, which, we think, shows conclusively that he did not pay \$4,500 a mill power for his water power.

The CHAIRMAN. That is, you brought up the question at the time of Mr. Appleton's examination, but didn't have the deeds?

Mr. GREEN. We didn't have the deeds. I asked him what he sold it for, but his memory was lacking. And that agreement shows, and the deed of it.

The CHAIRMAN. Do you put this in to contradict him?

Mr. GREEN. One purpose is for contradicting Mr. Appleton, when he says that he paid \$4,500 a mill power for his power.

The CHAIRMAN. It seems to me there wasn't any evidence of the land as land.

Mr. MATTHEWS. As far as the land goes, I think the Commission has that, the distance.

The CHAIRMAN. At any rate, we understand your position, and we will just hold the papers, and, if you will make a package of them to-day, I will take them all down to Boston with me.

Mr. MATTHEWS. We would like to be heard at some time on the evidence, Mr. Chairman.

The CHAIRMAN. We will hear you some time.

Mr. MATTHEWS. Now, Mr. Brooks, have you got those papers for me?

Mr. BROOKS. Yes, sir, they are right there.

Mr. MATTHEWS. Have you the one I just handed to you?

Mr. BROOKS. I gave that to Mr. Winchester. Do you want it?

Mr. MATTHEWS. Mr. Winchester, will you let me have that memorandum? (Paper handed to Mr. Matthews.) Have you a copy of this?

Mr. WINCHESTER. I have not.

Mr. MATTHEWS. I will ask for a few moments' delay, while I see whether these entries correspond with my request.

(Examining paper.)

I offer certain entries in the books of the Holyoke Water Power Company.

(Marked "Exhibit 237, F. H. B.")

[EXHIBIT 237.]

ENTRIES IN THE BOOKS OF THE HOLYOKE WATER POWER COMPANY.

COPIES OF CERTAIN ENTRIES, PAGES 209, 247, 290, AND 332 JOURNAL "C."

		Dr.	Cr.
360	Profit & Loss To Sundries One of the items — Electric Lt. Plant. May 31, 1892 page 209		\$56,126.40
360	Profit & Loss To Sundries One of the items — Electric Lt. Plant. May 31, 1893 page 247		4,711.41
360	Profit & Loss To Sundries One of the items — Electric Lt. Plant. Sept. 29, 1894 page 290		1,137.66
360	Bills Receivable January 2, 1896 page 332 To Electric Lt. Plant For Holyoke Street Railway Co.'s Demand Note Jan. 1, 1896 5% S. A. Interest in settlement of acct. for Generators as follows: 3 M. P. 75 Generators, Sept. 1, 1891 \$8,900.00 One M. P. 200 Generators in exchange for 1 M. P. 75 call date Feb. 1, 1893, Bonus 4,250.00 2 Holtzer-Cabot Regulators 215.00 Discount as per agreement (original) of 5% per annum to July 1, 1895, on Generators and a gross Discount of 20% on Regulators \$13,365.00 Bills Receivable as above \$11,000.00 Cash Jan. 2, 1896 2,262.37 See Letter Book (E. Lt.) Oct. 5, 1895 page 553 \$11,102.63	\$11,000.00	11,000.00

HOLYOKE WATER POWER COMPANY.
COPIES OF CERTAIN PAGES OF LEDGER "C."

ENTRIES IN BOOKS OF HOLYOKE WATER POWER CO. 47

		GAS	WORKS	(page 3).		Dr.	Cr.
1887	To Ledger "B"					\$100,000.00	
June 1							
		ELECTRIC	PLANT	(pages 30 and 360).	J		
1888	To Sundries	J				\$30,900.00	
June 27	" Disbursement	47				387.50	
Aug. 31	" "	58				364.50	
Dec. 31	" "	73					
1889	" Sundries	94				16,052.93	
May 31			1888				\$55.00
			Aug. 31	By Sundries	55		
			1889	" Balance			47,649.93
			May 31			\$47,704.93	\$47,704.93
1890	To Balance					\$47,649.93	
June 1							
July 26	" Cash	C.B.				6,000.00	
" 31	" Disbursement	359				483.23	
Aug. 30	" "	139				214.65	
		142					
Sept. 2	" Cash	C.B.				4,000.00	
" 30	" Gas Wks., J & E	375				18.00	
" "	" Disbursement	144				111.26	
Oct. 31	" "	146				380.61	
		148					
Nov. 29	" Cash, S.E.L. . . .	C.B.				1,360.00	
" "	" Disbursement't. . . .	21				802.76	
Dec. 31	" "	151				203.28	
		155					

(Pages 30 and 360 continued.)

1891	To Disburse'm't	1891 May 30 "	By Income " Balance	J 169	\$153.03 360.00 5.16 618.54	\$99.80 62,260.65 \$62,360.45
Jan. 31	"	158				
Feb. 28	"	160				
Mch. 31	"	161				
May 30	"	169				
		J				
1891	To Balance	173			\$62,260.65	
June 1	" Electric Lt. Flume	174			23.59	
" 30	" Disburse'm't	178			711.33	
July 31	"	181			669.87	
Aug. 31	"	184			1,027.70	
Sept. 30	"	187			202.96	
Oct. 31	"	188			23.54	
Nov. 17	" Wright, Lyons & Co.	190			5.82	
" 30	" C. F. McMurray	191			34.06	
Dec. 31	" Disburse'm't	192			2,369.98	
" 30	" C. F. McMurray	196			.28	
" 30	" Carpenter Shop	198			.25	
" 30	" Disburse'm't	203			203.95	
1892		204			213.72	
Jan. 30	"	206			5.36	
Feb. 29	"	207			100.00	
Apl. 30	" Second Level Ext.	208			6.00	
May 31	" Disburse'm't				208.40	
" 31	" Sundries				12,503.10	
" 31	"				165,566.62	
1892	To Balance	221				\$100.78 96,126.40 150,000.00 \$246,227.18
June 1	"					
Jan. 31	" Disburse'm't					
May 31	"					
1892	To Balance					\$150,000.00
June 1	"					
Jan. 31	"					
May 31	"					
1892	To Balance					\$246,227.18
June 1	"					
Jan. 31	"					
May 31	"					
1892	To Balance					\$150,000.00
June 1	"					
Jan. 31	"					
May 31	"					
1892	To Balance					\$246,227.18
June 1	"					
Jan. 31	"					
May 31	"					
1892	To Balance					\$150,000.00
June 1	"					
Jan. 31	"					
May 31	"					
1892	To Balance					\$246,227.18
June 1	"					
Jan. 31	"					
May 31	"					
1892	To Balance					\$150,000.00
June 1	"					
Jan. 31	"					
May 31	"					
1892	To Balance					\$246,227.18
June 1	"					
Jan. 31	"					
May 31	"					
1892	To Balance					\$150,000.00
June 1	"					
Jan. 31	"					
May 31	"					
1892	To Balance					\$246,227.18
June 1	"					
Jan. 31	"					
May 31	"					
1892	To Balance					\$150,000.00
June 1	"					
Jan. 31	"					
May 31	"					
1892	To Balance					\$246,227.18
June 1	"					
Jan. 31	"					
May 31	"					
1892	To Balance					\$150,000.00
June 1	"					
Jan. 31	"					
May 31	"					
1892	To Balance					\$246,227.18
June 1	"					
Jan. 31	"					
May 31	"					
1892	To Balance					\$150,000.00
June 1	"					
Jan. 31	"					
May 31	"					
1892	To Balance					\$246,227.18
June 1	"					
Jan. 31	"					
May 31	"					
1892	To Balance					\$150,000.00
June 1	"					
Jan. 31	"					
May 31	"					
1892	To Balance					\$246,227.18
June 1	"					
Jan. 31	"					
May 31	"					
1892	To Balance					\$150,000.00
June 1	"					
Jan. 31	"					
May 31	"					
1892	To Balance					\$246,227.18
June 1	"					
Jan. 31	"					
May 31	"					
1892	To Balance					\$150,000.00
June 1	"					
Jan. 31	"					
May 31	"					
1892	To Balance					\$246,227.18
June 1	"					
Jan. 31	"					
May 31	"					
1892	To Balance					\$150,000.00
June 1	"					
Jan. 31	"					
May 31	"					
1892	To Balance					\$246,227.18
June 1	"					
Jan. 31	"					
May 31	"					
1892	To Balance					\$150,000.00
June 1	"					
Jan. 31	"					
May 31	"					
1892	To Balance					\$246,227.18
June 1	"					
Jan. 31	"					
May 31	"					
1892	To Balance					\$150,000.00
June 1	"					
Jan. 31	"					
May 31	"					
1892	To Balance					\$246,227.18
June 1	"					
Jan. 31	"					
May 31	"					
1892	To Balance					\$150,000.00
June 1	"					
Jan. 31	"					
May 31	"					
1892	To Balance					\$246,227.18
June 1	"					
Jan. 31	"					
May 31	"					
1892	To Balance					\$150,000.00
June 1	"					
Jan. 31	"					
May 31	"					
1892	To Balance					\$246,227.18
June 1	"					
Jan. 31	"					
May 31	"					
1892	To Balance					\$150,000.00
June 1	"					
Jan. 31	"					
May 31	"					
1892	To Balance					\$246,227.18
June 1	"					
Jan. 31	"					
May 31	"					
1892	To Balance					\$150,000.00
June 1	"					
Jan. 31	"					
May 31	"					
1892	To Balance					\$246,227.18
June 1	"					
Jan. 31	"					
May 31	"					
1892	To Balance					\$150,000.00
June 1	"					
Jan. 31	"					
May 31	"					
1892	To Balance					\$246,227.18
June 1	"					
Jan. 31	"					
May 31	"					
1892	To Balance					\$150,000.00
June 1	"					
Jan. 31	"					
May 31	"					
1892	To Balance					\$246,227.18
June 1	"					
Jan. 31	"					
May 31	"					
1892	To Balance					\$150,000.00
June 1	"					
Jan. 31	"					
May 31	"					
1892	To Balance					\$246,227.18
June 1	"					
Jan. 31	"					
May 31	"					
1892	To Balance					\$150,000.00
June 1	"					
Jan. 31	"					
May 31	"					
1892	To Balance					\$246,227.18
June 1	"					
Jan. 31	"					
May 31	"					
1892	To Balance					\$150,000.00
June 1	"					
Jan. 31	"					
May 31	"					
1892	To Balance					\$246,227.18
June 1	"					
Jan. 31	"					
May 31	"					
1892	To Balance					\$150,000.00
June 1	"					
Jan. 31	"					
May 31	"					
1892	To Balance					\$246,227.18
June 1	"					
Jan. 31	"					
May 31	"					
1892	To Balance					\$150,000.00
June 1	"					
Jan. 31	"					
May 31	"					
1892	To Balance					\$246,227.18
June 1	"					
Jan. 31	"					
May 31	"					
1892	To Balance					\$150,000.00
June 1	"					
Jan. 31	"					
May 31	"					
1892	To Balance					\$246,227.18
June 1	"					
Jan. 31	"					
May 31	"					
1892	To Balance					\$150,000.00
June 1	"					
Jan. 31	"					
May 31	"					
1892	To Balance					\$246,227.18
June 1	"					
Jan. 31	"					
May 31	"					
1892	To Balance					\$150,000.00
June 1	"					
Jan. 31	"					
May 31	"					
1892	To Balance					\$246,227.18
June 1	"					
Jan. 31	"					
May 31	"					
1892	To Balance					\$150,000.00
June 1	"					
Jan. 31	"					
May 31	"					
1892	To Balance					\$246,227.18
June 1	"					
Jan. 31	"					
May 31	"					
1892	To Balance					\$150,000.00
June 1	"					
Jan. 31	"					
May 31	"					
1892	To Balance					\$246,227.18
June 1	"					
Jan. 31	"					
May 31	"					
1892	To Balance					\$150,000.00
June 1	"					
Jan. 31	"					
May 31	"					
1892	To Balance					\$246,227.18
June 1	"					
Jan. 31	"					

1893 June 1	1893 May 31	By Profit & Loss	247	100.00 161.41	\$4,711.41 150,000.00 \$154,711.41
1893 Aug. 31	"	" Balance			
1893 Sept. 30					
1893 Dec. 30					
1894 Oct. 1	1894 Sept. 29	By Profit & Loss	290		\$1,137.66 150,000.00 \$151,137.66
1894 Feb. 29	"	" Balance			
1896 Oct. 1	1896 Jan. 2	By Hol. St. Ry.	332		\$11,000.00
1896 Feb. 29	"	B. R. Cash			
	1896 Sept. 30	" Do Do	2		102.63 141,197.37 \$152,300.00
		" Balance			
1896 Oct. 1	1899 Sept. 30	By Balance			\$141,800.87 \$141,800.87
1899 Oct. 1					

ELECTRIC LIGHT STATION.

pp. 350 & 359.

				Dr.	Cr.
1890	J				
Aug. 30	To Carpenter Shop	141		\$38.68	
" "	" Disburse'm't	142		490.55	
Sept. 30	" Carpenter Shop	145		76.77	
" "	" Disburse'm't	146		3,022.69	
Oct. 31	" Carpenter Shop	147		52.94	
" "	" Disburse'm't	148		3,930.33	
Nov. 29	" Carpenter Shop	150		207.60	
" "	" Disburse'm't	151		4,653.76	
" "	" D. D. Johnson	152		1,310.47	
Dec. 31	" Carpenter Shop	153		359.57	
" "	" Disburse'm't	155		2,310.21	
1891					
Jan. 31	" Carpenter Shop	156		114.47	
" "	" Disburse'm't	158		2,885.00	
Feb. 28	" Carpenter Shop	159		105.28	
" "	" Disburse'm't	160		1,434.10	
Mch. 31	" "	161		1,136.75	
" "	" Carpenter Shop	162		43.44	
" "	" "	164		18.24	
Apl. 30	" Disburse'm't	165		1,221.09	
" "	" Delaney Bros.	166		4,291.90	
May 30	" Sundries	167		49,546.67	
" "	" El. Lt. I & E	"		48.00	
" "	" Gas Wks "	168		77.38	
" "	" Carpenter Shop	"		7.97	
" "	" Disburse'm't	169		586.18	
					\$3.00
					75.00
					1.00
					3.21
					77,887.83
					\$77,970.04
					\$77,970.04

ENTRIES IN BOOKS OF HOLYOKE WATER POWER CO. 51

[illegible]

ELECTRIC LIGHT FLUME.

pp. 343 & 357.

<i>Dr.</i>	-	<i>Cr.</i>
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[illegible]

ENTRIES IN BOOKS OF HOLYOKE WATER POWER CO. 53

1890	June 1	By Balance	148	\$55,917.38
	Nov. 30	" Disbursement	151	
	Dec. 31	" "	155	
1891	Jan. 31	" "	158	
	Mch. 31	" "	161	
	Apr. 30	" Electric Lt. Sta.	163	
	" "	" Carpenter Shop	164	
	" "	" Disbursement't	165	
	" "	" Cabot St. Mill	164	
	May 30	" Delaney Bros.	166	
	" "	" Carpenter Shop	168	
	" "	" Disbursement't	169	
1891	June 1	To Balance	173	\$55,917.38
	" 30	" Carpenter Shop	173	
	" "	" El. Lt. Station	173	
	" "	" Disbursement't	174	
	July 31	" Carpenter Shop	177	
	" "	" Disbursement't	178	
	Aug. 31	" Carpenter Shop	180	
	" "	" Disbursement't	181	
	Sept. 30	" Carpenter Shop	182	
	" "	" Disbursement't	184	
	" "	" Sundries	183	
	Oct. 31	" Disbursement't	187	
	Nov. 30	" Carpenter Shop	188	
	" "	" Disbursement't	190	
	Dec. 31	" "	192	
1891	June 30	By El. Lt. Plant	173	\$23.59
	July 31	" Sundries	176	.60
	Aug. 31	" "	179	2.77
	Sept. 30	" "	182	24.40
	Oct. 31	" Income	186	50.00
1892	Mch. 31	" El. Lt. Stats.	200	15.63
	May 31	" " Plant	208	61,981.37
				\$62,098.36
1890	June 1	By Balance	148	\$55,917.38
	Nov. 30	" Disbursement	151	
	Dec. 31	" "	155	
1891	Jan. 31	" "	158	
	Mch. 31	" "	161	
	Apr. 30	" Electric Lt. Sta.	163	
	" "	" Carpenter Shop	164	
	" "	" Disbursement't	165	
	" "	" Cabot St. Mill	164	
	May 30	" Delaney Bros.	166	
	" "	" Carpenter Shop	168	
	" "	" Disbursement't	169	
1891	June 1	To Balance	173	\$55,917.38
	" 30	" Carpenter Shop	173	
	" "	" El. Lt. Station	173	
	" "	" Disbursement't	174	
	July 31	" Carpenter Shop	177	
	" "	" Disbursement't	178	
	Aug. 31	" Carpenter Shop	180	
	" "	" Disbursement't	181	
	Sept. 30	" Carpenter Shop	182	
	" "	" Disbursement't	184	
	" "	" Sundries	183	
	Oct. 31	" Disbursement't	187	
	Nov. 30	" Carpenter Shop	188	
	" "	" Disbursement't	190	
	Dec. 31	" "	192	
1891	June 30	By El. Lt. Plant	173	\$23.59
	July 31	" Sundries	176	.60
	Aug. 31	" "	179	2.77
	Sept. 30	" "	182	24.40
	Oct. 31	" Income	186	50.00
1892	Mch. 31	" El. Lt. Stats.	200	15.63
	May 31	" " Plant	208	61,981.37
				\$62,098.36

WEDNESDAY, MAY 1, 1901.

PP. 409 & 411.			WASHOUT, UPPER LEVEL CANAL.			Dr.	Cr.
1889			J				
June 29	To Sundries	97				\$715.54	
" "	" Carpenter Sh.	"				369.73	
" "	" Disbursem't	98				2,993.86	
July 31	" Carpenter Sh.	101				15.81	
" "	" Disbursem't	102				3,917.83	
Aug. 31	" Carpenter Sh.	103				113.07	
" "	" Disbursem't	104				1,233.98	
Sept. 30	" Cabot St. Mill	105				722.58	
" "	" Carpenter Sh.	"				58.62	
" "	" Cabot St. M.	106				10.86	
" "	" Disbursem't	"				2,889.51	
Oct. 31	" Landers Bros	108				2,301.29	
" "	" Carpenter Sh.	109				77.77	
" "	" Disbursem't	110				991.51	
Nov. 30	" Carpenter Sh.	112				41.04	
" "	" Disbursem't	113				4,012.43	
Dec. 31	" Carpenter Sh.	115				11.79	
" "	" Disbursem't	116				804.45	
1890							
Jan. 31	" "	118				27.70	
" "	" Carpenter Sh.	119				157.13	
Feb. 18	" El. Lt. I. & E.	122				8.45	
" 28	" Carpenter Sh.	120				1.31	
" "	" Disbursem't	121				12.30	
"Mch. 31	" "	124				4.00	
Apl. 30	" "	127				3.35	
May 31	" El. Lt. I. & E.	130				2.50	
" "	" Disbursem't	131				.48	

[illegible]

Mr. MATTHEWS. I now offer certain vouchers showing prices paid for some of the electrical apparatus of the Holyoke Water Power Company. I requested copies of these to be made, and I have no doubt the Company would have furnished them if they had had time; but Mr. Winchester informs me that there was no time. What shall I do with them?

The CHAIRMAN. You can have them marked, and you can take them off the files and put on copies.

Mr. MATTHEWS. Will that be satisfactory, Mr. Winchester?

Mr. BROOKS. Couldn't you mark those for identification —

Mr. MATTHEWS. And have the copies marked as exhibits?

Mr. BROOKS. Yes.

The CHAIRMAN. All right; hand them to Mr. Winchester.

Mr. MATTHEWS. I think I will have them specified in the record, so that there will be no misunderstanding. Exhibit 238 A, is a list of apparatus bought in 1890, amounting to \$13,360, 238 B, is a bill for \$750, dated May 27, 1891, being an adjustment of the contract for switchboard, as near as I can make out. The next is —

The CHAIRMAN. Mr. Matthews, they may be marked —

Mr. MATTHEWS. The only point is, I have no copies of them.

The CHAIRMAN. Very well, let them be marked, and Mr. Winchester take them, or you can have them copied here in the building to-day.

Mr. MATTHEWS. I think that will be the best plan.

The CHAIRMAN. Very well.

Mr. BROOKS. I assure you that you shall have them all. The stenographer says that he would have to send out and find some one to copy them, and I think he had better take them, and have copies made later.

Mr. MATTHEWS. These exhibits, Mr. Stenographer, are number 238, and they run from A to J, inclusive, alphabetically; and somebody, I understand, is going to furnish copies, — either you, Mr. Burt, or Mr. Winchester.

Mr. BROOKS. I am perfectly willing Mr. Burt should take them, as far as I am concerned.

The CHAIRMAN. Let Mr. Burt take them, and get them copied later.

(The vouchers referred to, marked "Exhibit 238 A" to "Exhibit 238 J," both inclusive, are as follows) :—

[EXHIBIT 238 A.]

APPARATUS BOUGHT IN 1890.

4-Type 6 B 50-lamp, $\frac{1}{2}$ -arc Dynamos, Nos. 308, 317, 332, 333, Regulators, 4	\$6,420.00
Ammeters, 4 x 4 x 20	80.00
140 Double Lamps, \$32.40	4,536.00
	<u>\$11,036.00</u>
Miscellaneous	324.00
	<u>\$13,360.00</u>

[EXHIBIT 238 B.]

BOSTON, May 27, 1891.

HOLYOKE WATER POWER CO.

Bought of

THOMSON-HOUSTON ELECTRIC CO.

1 20 Circ. Arc Plug Switch Board	\$1,500.00	
Less goods ret'd.	750.00	\$750.00

(Approved, E. S. WATERS, *Treas.*)

(Paid, Aug. 5, 1891.)

THOMSON-HOUSTON ELECTRIC CO.

(Price F. O. B. Lynn, \$750.)

(R. C. W.)

[EXHIBIT 238 C.]

\$7,500.

Sept. 14, 1891.

RECEIVED of the HOLYOKE WATER POWER Co. Seven Thousand Five Hundred Dollars on acct. purchase price of Generators, etc., amounting to \$8,900.

(Approved, E. S. WATERS, *Treas.*)

(Paid, Sept. 15, 1891.)

THOMSON-HOUSTON ELECTRIC CO.

[EXHIBIT 238 D.]

\$3,000.

Oct. 31, 1891.

RECEIVED of the HOLYOKE WATER POWER Co. Three Thousand Dollars on acct. of Electrical apparatus delivered and to be delivered. Total contract \$3,000.

EDISON GENERAL ELECTRIC CO.

(New England District),

Per J. C. REDMOND, *Cashier.*(Approved, E. S. WATERS, *Treas.*)

WEDNESDAY, MAY 1, 1901.

[EXHIBIT 238 E.]

\$1,400.

Nov. 21, 1891.

RECEIVED of the HOLYOKE WATER POWER CO. Fourteen Hundred Dollars
balance acct. for Generators, as per agreement of April 29, 1891.

THOMSON-HOUSTON ELECTRIC CO.

Memo.

\$7,500 paid Sept. 14, 1891.

HOLYOKE WATER POWER CO.

Boston, Sept. 9, 1891.

Bought of

THOMSON-HOUSTON ELECTRIC CO.

3 M. P. 75 Generators comp. inc. all stationary equipments and labor
of installation, Nos. 81, 87, 100, as per contract of April 29,

1891	\$8,900.00
September 14, cash on account	7,500.00
	<u>\$1,400.00</u>

Memo.

\$1,400. Paid total November 21.

[EXHIBIT 238 F.]

HOLYOKE WATER POWER CO.,

MIDDLETOWN, CONN., Oct. 13, 1891.

Holyoke, Mass.

TO THE SCHUYLER ELECTRIC CO., *Dr.*

3 Ammeters, Nos. 141, 144, and 147	\$20.00	\$60.00
12 Cut-outs, complete	2.50	30.00
No. 31 S. W. Silk Mag. Wire, 4 lbs. 4 oz., 3d.	1.82	7.76
3 Ammeter Cases25	<u>.75</u>

\$198.51

(Paid Nov. 30, 1891.)

THE SCHUYLER ELECTRIC CO.

(Correct, S. B. W.)

HOLYOKE WATER POWER CO.,

MIDDLETOWN, CONN., Oct. 13, 1891.

Holyoke Mass.

TO THE SCHUYLER ELECTRIC CO., *Dr.*

To frt. and ctg. per invoice enclosed	\$2.03
Sept. 16, " " " " on Armature for Rep.	<u>1.34</u>

\$3.37

(Paid Nov. 30, 1891.)

THE SCHUYLER ELECTRIC CO.

(O.K., R. C. W.)

VOUCHERS OF ELECTRICAL APPARATUS.

59

HOLYOKE WATER POWER CO.,
Holyoke, Mass.

MIDDLETOWN, CONN., Oct. 16, 1891.

TO THE SCHUYLER ELECTRIC CO., *Dr.*

35 "B" Double Lamps	\$32.00	\$1,120.00
4 10-light Cases	2.50	10.00
		<u>\$1,130.00</u>

(Paid Nov. 30, 1891.)

THE SCHUYLER ELECTRIC CO.

(Correct, S. B. W.)

[EXHIBIT 238 G.]

THE HOLTZER-CABOT ELECTRIC CO.,
92 Franklin Street.

BOSTON, Nov. 9, 1891.

Sold to HOLYOKE WATER POWER CO., Holyoke, Mass.

Sept. 17, 1 Pressure Indicator and Regulator	\$70.00
2 Banks High Resistance Lamps	16.00
Special work on regulator	14.00
	<u>\$100.00</u>

(Received payment Dec. 14, 1891.)

THE HOLTZER-CABOT ELECTRIC CO.

(Approved, E. S. WATERS, *Treas.*)

[EXHIBIT 238 H.]

THE HOLTZER-CABOT ELECTRIC CO.,
92 Franklin Street.

BOSTON, Feb. 6, 1892.

Sold to HOLYOKE WATER POWER CO., Holyoke, Mass.

1 Ant. Pressure Controller, 1 Pressure Indicator, 1 Lamp Bank	\$100.00
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(Received payment April 20, 1892.)

THE HOLTZER-CABOT ELECTRIC CO.

(Correct, S. B. W.)

(Approved, E. S. WATERS, *Treas.*)

[EXHIBIT 238 I.]

Bill No. 19,484.

BOSTON, Nov. 26, 1892.

HOLYOKE WATER POWER CO.

TO GENERAL ELECTRIC CO. (NEW ENGLAND DISTRICT), *Dr.*

1 Class M. P. 200, 500-volt S. S. Dyn., No. 616 Right Hand, 2 E	
Main Fuses	\$6,750.00
6 Boxes and Crates	27.25
	<u>\$6,777.25</u>

1 M. P. 200 Sw. Board Panel to go later.

1 " 75 Gen. and Equip. to be returned at \$2,500.

Shipped from Lynn via B. & M. R.R.

WEDNESDAY, MAY 1, 1901.

Credit Memorandum No. 26,482.

BOSTON, Jan. 26, 1893.

GENERAL ELECTRIC CO. (NEW ENGLAND DISTRICT), *Dr.*

To HOLYOKE WATER POWER CO.

For Credits to your account, as follows:—

Boxing on Bill 19,484	\$27.25
---------------------------------	---------

\$4,250.

Jan. 24, 1893.

RECEIVED of the HOLYOKE WATER POWER CO. Four Thousand Two Hundred Fifty Dollars cash consideration in exchange of Generators, as per proposition of Nov. 7, 1892.

GENERAL ELECTRIC CO.
Per C. S. HALEY.

(Approved, E. S. WATERS, *Treas.*)

[EXHIBIT 238 J.]

MIDDLETOWN, CONN., Aug. 14, 1893.

HOLYOKE WATER POWER CO.,

Holyoke, Mass.

To THE SCHUYLER ELECTRIC CO., *Dr.*

	80.00	
16 B Double Lamps 50-20%, \$32.00		\$512.00
1 10-light Cases, No. 9,601		2.50
1 Box, No. 9,603		1.25
		<u>\$515.75</u>
Less Boxes		3.75
		<u>\$512.00</u>

(Paid, Aug. 31, 1893.)

THE SCHUYLER ELECTRIC CO.

(Approved, E. S. WATERS, *Treas.*)

HOLYOKE WATER POWER CO.,

MIDDLETOWN, CONN., Aug. 22, 1893.

Holyoke, Mass.

To THE SCHUYLER ELECTRIC CO., *Dr.*

	80.00	
9 B Double Lamps 50-20% \$32.00		\$288.00
1 10-light Cases		2.50
		<u>\$290.50</u>
Less Boxes		2.50
		<u>\$288.00</u>

(Paid, Aug. 31, 1893.)

THE SCHUYLER ELECTRIC CO.

(Approved, E. S. WATERS, *Treas.*)

Mr. MATTHEWS. I now offer four other papers. I think these will have to be separated, because they are in regard to non-related matters. The first is a bill dated Oct. 3, 1895, from the American Electric Supply and Construction Company to the Holyoke Water Power Company for two 50-light Schuyler dynamos at \$350 each, carried out, \$700; boxing, \$4 each, carried out as \$8; total, \$708.

Mr. BROOKS. Are you going to read these, and have them go into the record?

Mr. MATTHEWS. I thought so.

Mr. BROOKS. You might as well do it with all of them, then.

Mr. MATTHEWS. No, the others were merely bills; these are something more. There is a discount of \$8 freight, apparently, making the net bill \$700, and a receipt at the bottom of it under date of Oct. 7, 1895. This is Exhibit 239.*

The next are two bills, Exhibit 240. The two papers which together constitute Exhibit 240 are both dated July 20, 1897. One of them is a bill of the Electric Exchange against the Holyoke Water Power Company for 20 Schuyler arc lamps, double carbons, at \$8 each, \$160. The other paper is a credit of 15 American arc lamps, \$120.*

The third paper, Exhibit 241, is a letter from the Holyoke Water Power Company to W. S. Loomis, treasurer of the Holyoke Street Railway Company, dated Oct. 5, 1895.

Mr. BROOKS. What is it about?

Mr. MATTHEWS. It simply completes the transaction between the Holyoke Water Power Company and the Holyoke

* See note on following page.

Street Railway Company, and shows how they adjusted their accounts for machinery.

The last paper is a letter from the Schuyler Electric Company, dated July 2, 1890, and that will be Exhibit 242. (Number subsequently changed to 241.)*

* Pages have been left for the insertion of Exhibits 239, 240, and 241, but at the time of printing they cannot be found. If found hereafter they are to be printed in a later volume.

Mr. BROOKS. We do not agree for a moment that this letter to the Holyoke Street Railway Company is competent.

The CHAIRMAN. We will hear you later on it.

Mr. BROOKS. Yes; that is all right. I did not know whether it went in now as an exhibit or not.

The CHAIRMAN. We do not want to leave too many loose ends here; we would rather hear you now.

Mr. BROOKS. Well, it seemed to me that your Honor might call the other side — let me see that — if I understand, this letter to the Holyoke Street Railway Company — I have no objection to your Honors seeing it — it was an adjustment between the Holyoke Street Railway Company and the Holyoke Water Power Company for certain machinery that was comprehended in the contract, and which, under the contract, as I recall it, the Holyoke Street Railway Company were to take at a 5 per cent. discount.

Mr. MATTHEWS. 5 per cent. per annum.

Mr. BROOKS. No, the contract don't say so. 5 per cent. discount. Now they made a different adjustment. I would be very glad to have your Honors see it.

Mr. GREEN. What is the date of that letter?

Mr. BROOKS. Oct. 5, 1895; but I should also like to have you see the street railway contract.

The CHAIRMAN. That has already gone in, hasn't it?

Mr. BROOKS. Yes, your Honor.

Mr. MATTHEWS. There has been some oral testimony regarding the matter, and this is the adjustment for the machinery account.

The CHAIRMAN. Let it be marked as an exhibit, and then the legal effect of it we will hear you upon when you come to argue your question.

Mr. BROOKS. It is a small matter, I agree.

The CHAIRMAN. I know; but, at the same time, to settle it definitely we should have to go back to two or three different things.

Mr. BROOKS. I ask that it be marked for identification, and not as an exhibit.

The CHAIRMAN. It seems to me we ought to let this in.

Mr. MATTHEWS. It is immaterial to us which course is followed.

The CHAIRMAN. Have it marked for identification.

(Paper marked "X, S. M. S." for identification.)

Mr. MATTHEWS. I will state that its relevancy could not be understood without a lot of other papers which we have not here.

Mr. COTTER. Do you admit it relates to some adjustment, Mr. Matthews?

Mr. MATTHEWS. Certainly, sir.

Mr. GOULDING. It would not be competent against the Company, as between them and the railway.

Mr. MATTHEWS. I am ready to argue it out now, but I have not the street railway contract with me, and I should be talking at random. I should prefer to argue this question with the other two, when I have the documents before me. There is a good deal of evidence relating to this machinery, and we think it has a material bearing. There is no more objection to the adjustment as such than to the contract as such.

Mr. BROOKS. Here is the street railway contract, Mr. Matthews, if you wish to see it.

The CHAIRMAN. That has already been put in. Very well, we will wait until the question comes up.

Mr. MATTHEWS. Now I would like to understand how many of these questions there are. In the first place, the Appleton Riverside transaction.

The CHAIRMAN. Yes.

Mr. MATTHEWS. The next is the —

Mr. GREEN. The surplus contract, the Newton contract, the exhibits I had marked for identification.

Mr. MATTHEWS. The surplus contract.

Mr. GREEN. And the Mackintosh, the Crocker, the Dickinson and Clark.

Mr. MATTHEWS. I have got them now.

ALBERT F. SICKMAN, *recalled*.

Cross examination by Mr. MATTHEWS.

The CHAIRMAN. Now, as I understand, Mr. Matthews, you have all that you have asked for?

Mr. MATTHEWS. I have, with the exception of some water power records, which Mr. Sickman perhaps can testify to.

The CHAIRMAN. Now what question has been reserved?

Mr. MATTHEWS. I understand that there are three questions which are not yet argued out, all relating to the admissibility to certain contracts or correspondence. The first relates to the Appleton Riverside transaction, the second relates to the surplus agreements that were offered yesterday, — and there were six papers, — and the third is this letter of October 5 to the street railway company. And it is just as easy to argue them all together, when we have the documents before us, as it would be now.

Q. Now Mr. Sickman, have you any —

Mr. GREEN. The number of days of restriction you have?

The WITNESS. Yes, sir.

Q. Have you a paper showing the number of restricted days, headed, Restrictions for the whole or — for whole or part of a day, the George R. Dickinson, Parsons No. 2, and Linden Paper Mills, on the first level canal? Is that right? A. Yes.

Mr. MATTHEWS. This table says for the years 1896, '7, '8, and '9, — not the aggregate number of restricted days reduced to days of 24 hours each, but the total number of days upon which there was any restricted time; am I right?

The WITNESS. Yes.

Mr. BROOKS. Is it headed so that it will show?

Mr. MATTHEWS. I think so, with that explanation. I don't think it will otherwise. I think we had better change the heading.

Mr. BROOKS. That heading should be changed, in order to make it —

Mr. MATTHEWS. It is all right, if it is printed in the record under that statement.

Mr. BROOKS. Why can't we fix it?

Mr. MATTHEWS. Any way, to suit yourself.

Mr. BROOKS. It is during which there was any restriction.

Mr. MATTHEWS. That is it, number of different days upon which there is any restriction.

Mr. BROOKS. You don't want this other heading. It should be, "Number of different days during which there were any restrictions."

(Paper marked "Exhibit 242, S. M. S.")

[EXHIBIT 242.]

NUMBER OF DIFFERENT DAYS DURING WHICH THERE
WERE ANY RESTRICTIONS.

Year.	George R. Dick- inson.	Parsons No. 2.	Linden.	
1896.	5	5	4	
1897.	36	36	35	
1898.	18	18	18	
1899.	90	86	91	

By Mr. MATTHEWS.

Q. Mr. Sickman, I wish you would explain to what extent, if any, holders of non-permanent power are entitled to 50 per cent.?

Mr. GOULDING. Isn't that a matter that appears from the indentures?

The CHAIRMAN. I should think so.

Mr. MATTHEWS. Possibly I should have put the question in this way: To what extent the holders of non-permanent power use the 50 per cent. surplus, so far as he knows.

Mr. BROOKS. How is that material?

Mr. MATTHEWS. I can prove it from the records, too, if my brothers object; but the records are extremely voluminous. I spent two hours over them yesterday.

Mr. BROOKS. We say it isn't competent, may it please your Honor.

The CHAIRMAN. You wouldn't object to the records?

Mr. GOULDING. Our objection is as to the competency of this evidence as to what use the 50 per cent. surplus power has been put by mill owners in Holyoke. As a matter of fact, how does that bear on any question involved here,—involving the value of water power, to what extent they have used it? I submit it has no relation to any question here.

Mr. MATTHEWS. It has many bearings on the issues in this case. In the first place, a great deal of evidence has been put in by the other side as to the practice in regard to the use of the different classes of power. All the water experts of the Company have gone into that matter at length, under our objection. And, in the next place, it may be very material for the Commission to consider to what extent the Company is likely to take advantage of the right reserved to it in the proposed lease, to give the prior lessees of non-permanent power the 50 per cent. surplus.

The CHAIRMAN. I understand the matter of surplus is the right of giving to the holders of permanent power, and that is largely dependent upon the discretion or the action of the manufacturers themselves. They may not want the 50 per cent. surplus. It all depends upon their action.

Mr. MATTHEWS. Exactly. But we are subject to their prior use of water power to the extent that it may be requested.

The CHAIRMAN. Yes, up to the 50 per cent.

Mr. MATTHEWS. Up to 50 per cent. of the power. There is no question about that. But there has been some question in this case as to whether the 50 per cent. surplus applied to lessees of non-permanent power. We understand that under the proposed lease we should be subject to that use, if the Company saw fit to grant it to lessees of non-permanent power. I

understood yesterday there was some doubt expressed as to whether or not it would.

Mr. BROOKS. We say there is no surplus, up to 50 per cent., which goes in the indenture of non-permanent power, and there hasn't been any shown.

Mr. MATTHEWS. It is reserved as against us.

The CHAIRMAN. It don't seem to us there is any need of any more discussion of this question. If your contention is right, that they have the right to reserve 50 per cent., you have the right to argue that they will reserve it entire. If the opposite contention is right, that there isn't any such right, it has already appeared. The fact that this witness can testify what the amount is, in his judgment, I don't think is admissible.

Mr. MATTHEWS. The difficulty in that ruling, your Honor, would be this. The Company has intimated in several stages of this case they might argue that the Company was entitled to treat us according to the strict letter, restricting our use to that of every preceding lessee, but that in practice the Company doesn't do that; and, therefore, it is competent for the Commission to value this proposed lease in view of its probable operation in fact. That, certainly, is the argument; and I can refer to a dozen statements by both counsel for the Water Power Company. And, to whatever extent that argument is well founded, it must be open to us to show that, as a matter of fact, the Company does exercise the rights it seeks to reserve against us, and does give prior lessees of non-permanent power, in some instances, at least, the right to draw surplus up to 50 per cent. The weight to be attributed to that practice depends upon what the Company is likely to do. I admit it is very vague and unsatisfactory, but we want it more for the purpose of meeting what our brothers are going to argue.

Mr. BROOKS. Mr. Matthews, do you claim that under the offer as it stands, with the amendment, there can be any such contention?

Mr. MATTHEWS. Any such reservation as against us?

Mr. BROOKS. Yes.

Mr. MATTHEWS. I had supposed so, yes.

Mr. GOULDING. I don't see as yet that any suggestion has been made leading to the conclusion that this evidence can be competent. The question asked was to what extent the owners of permanent power have used such 50 per cent., or up to 50 per cent. surplus. If it is competent to show that, then it is competent to go into every case, and show exactly the reason and circumstances in the particular instances, as a matter of fact. I don't think the argument that has been suggested addresses itself to the point of our objection.

Mr. GREEN. The days of restriction that they have averaged for us depend on the amount of surplus power which actually has been used.

The CHAIRMAN. Now, as I understand it, it is this. The Holyoke Water Power Company has been letting its power holders have surplus. They can take it up to 50 per cent. Sometimes they do, sometimes they don't. It depends, I suppose, largely upon the amount of business the mills are doing. I don't think, under all the circumstances, that that evidence will help us. We exclude it.

Mr. MATTHEWS. We desire to except.

Q. Now, Mr. Sickman, did the Crocker Manufacturing Company, as soon as it became entitled to the 10 non-permanent mill power specified in its lease of March 1, 1895, continue to draw up to the 50 per cent. surplus on its pre-existing permanent power?

Mr. BROOKS. We object.

The CHAIRMAN. What do you want of that, Mr. Matthews?

Mr. MATTHEWS. This question will lead to the elucidation of the facts about these agreements for surplus, which are held in abeyance for further argument.

The CHAIRMAN. I think it ought to be excluded.

Mr. MATTHEWS. I haven't stated the reason why it is admissible. If this is excluded, the agreements themselves should be excluded; and I understood that we were to have an opportunity to argue that question. I will state our position in the matter, if the Commission desires. I thought this whole

line of evidence was admitted last Friday, but it seems I have got to argue it all over again.

The CHAIRMAN. You don't need to argue it all over again, Mr. Matthews. Now you seem to take up questions which have been already passed upon.

Mr. MATTHEWS. This is the question which I stated to the Commission yesterday was the one which I had left. I stated that we had this question left. I never said, and there never has been any intimation on our part, that we proposed to close our case before we got at the bottom facts relating to this letting of non-permanent power by the Holyoke Water Power Company at \$1,500 per annum.

The CHAIRMAN. What is your question?

Mr. MATTHEWS. If the Commission desires to hear me all over again, after ruling in our favor last Friday —

Mr. BROOKS. I submit that the Commission never made any ruling.

Mr. MATTHEWS. I will read the ruling.

The CHAIRMAN. Very well. Read the ruling.

Mr. MATTHEWS. The question then was to what extent and whether we could show the collateral agreements, and also the evidence respecting the use of water power. Those two points were under discussion last Thursday morning and last Friday morning; and the final ruling of the Commission is to be found on page 219 of the testimony of April 26. It is as follows: —

“The CHAIRMAN. Gentlemen, we think this evidence is competent, putting it upon the ground that the petitioner at the time of putting in his case went upon the assumption, particularly in questions put to Mr. Allen, that non-permanent power was leasing in Holyoke for \$1,500.”

The CHAIRMAN. Very well. What has that to do with this question?

Mr. MATTHEWS. We say they never leased non-permanent power for \$1,500; and we propose to show by this witness, and by other competent evidence, that the so-called \$1,500 non-permanent powers were not non-permanent mill powers at all.

The CHAIRMAN. Referring to the question put to the witness, what has that got to do with it?

Mr. GOULDING. Whether they used any non-permanent water under that, or any surplus up to the 50 per cent. limit, after the contract of March 1, 1895. My friend hasn't addressed himself to that at all. I should like to know how that proves anything.

The CHAIRMAN. We haven't ruled on any such question as that, Mr. Matthews. You are entirely mistaken. I followed that argument last Friday carefully, and it related to no such thing as is now raised. What we admitted in the testimony last Friday was as bearing upon the valuation of \$1,500. You offered to show from these different agreements that you put in that, as a matter of fact, the agreements were not for \$1,500, and that there were collateral agreements, an arrangement by which the amount should be minimized. Now this question proceeds upon an entirely different principle, as I understand it.

Mr. MATTHEWS. I now offer to show, by means of the collateral agreements which are under consideration, for the use of 50 per cent. surplus on the power owned by these two mills, and by the testimony of this witness respecting the use made of the water power designated in these leases as non-permanent power, that it is not non-permanent power at all, but something different from and superior in value to non-permanent power. I think I might, perhaps, bring the matter more clearly before the Commission if I should state a little more fully our contention in the matter. There are two things the Commission can do with the question of water power, in so far as the annual rent to be paid by the City goes. They can take our theory of the case, and hold that the City must pay for such power as can be properly utilized in the electric light plant, the annual value of this water power for its use in operating an electric light station. That, we shall contend, upon the evidence in the case, is \$1,500 per annum by measured water; that is, paying for what we get at the rate of \$1,500 a year, which would amount to a gross sum of about a little over \$4,500, or between \$4,500 and \$4,000 per annum, without any bonus down. That is our contention as to

the duty of the Commission in respect to fixing the amount to be paid for the use of water power by the City after it purchases this plant. But the act says, if the Commission find any part of the property of the Company—and I will assume for the purposes of this argument that that includes water power—has any greater value for any other purposes than for the purposes of its use,—that is, any greater value than for the purpose of running an electric lighting central station,—the Commission must award that value. Now that raises the question, What, in general, for any purpose, is the market value of this non-permanent power in Holyoke? Mr. Brooks in his opening stated that he would show that, as a matter of fact, the mills in Holyoke were paying \$1,500 a year for that class of power that the Company was, or, to quote his language, that the Company was getting \$1,500 a year; that \$1,500 a year was being paid for non-permanent power in Holyoke. We say that isn't so. We say that no non-permanent power has ever been sold in Holyoke by the Holyoke Water Power Company at \$1,500 per annum. They put in no evidence of it. They declined at the outset to produce the leases. They were finally put in by us. And then it appeared that all the non-permanent power that this corporation ever sold in Holyoke was sold on the basis of \$600 a year, with the exception of two instances, the Crocker and the Dickinson leases, of March 1, 1895, in each of which the first three mill power were to be paid for at the rate of \$1,500 per annum. Now we say that we are not concluded by the description of power to be found in those leases. We say we are not concluded by the leases, but ought to be permitted to show by any competent evidence either that the amount of \$1,500 was not in fact paid or that it was modified by some collateral or subsequent agreement, so that a smaller sum was to be paid for the three mill power; or, what amounts to the same thing, that the power itself was different, and was not properly described in these two leases as non-permanent.

It must, it seems to us, have struck every member of this tribunal as a very singular thing for the corporation to divide

the mill powers leased at one and the same time into two classes, and to prescribe that a certain amount should be paid for the first three of them, and a certain lower amount to be paid for the remaining seven in the one case and three in the other. That in itself, it seems to me, must have struck the Commission with surprise. It must have occurred to the Commission that there might be some explanation to be found in the collateral circumstances relating to this transaction which would explain the apparent discrimination. And, again, why the word *first*? What was the meaning and sense of the word *first* in those two indentures? Are we not to be permitted to explain it? Can we not construe those leases for the purpose of showing what was paid for non-permanent power, not only in the light of all the collateral agreements simultaneously or subsequently entered into, but also in the light of the surrounding circumstances and of the conduct of the parties under the instrument? When we get all the secret agreements which these gentlemen took care should never be recorded in the Hampden County Registry of Deeds, when we get the agreements for surplus which were offered yesterday, the surrounding circumstances, and the conduct of the parties under these two instruments of March 1, 1895,—when we get the facts of the case, it will appear, we think, beyond any question that the three mill powers asserted in the leases to be non-permanent were not non-permanent at all, but simply substitutes for the 50 per cent. surplus. In each case the three mill powers were treated by the parties themselves, not as non-permanent, but as surplus power, which is a higher grade and a superior quality of water power in Holyoke. The days of restriction were different for these three from what they were for the remaining seven in the one case and the remaining three in the other. In other words, those three mill powers were not non-permanent at all, but 50 per cent. surplus power. So far from being what has been called in this case non-permanent, they are to be assimilated to another kind of water power, which has been mentioned. Your Honors will recollect that the Lyman Mills had five indentured surplus mill powers, ranking, we understand, ahead of

non-permanent. These three so-called non-permanent mill powers leased to the Crocker Manufacturing Company and to the George R. Dickinson Paper Company, March 1, 1895, were of that character. We claim that is conclusively established by the collateral and surrounding circumstances of the case and the conduct of the parties, and that, in substance, what those two transactions amounted to was simply this: that, whereas both the Crocker Manufacturing Company and the George R. Dickinson Paper Company had, on the 1st of March, 1895, the right to use surplus power to the extent of three mill powers, being 50 per cent. of the six mill powers which each of those companies then had, having the right to use 50 per cent. surplus to an extent of three mill power, for which they would have had to pay \$1,500, if they used it, as they did in operating paper mills, on a twenty-four hour load throughout the year,—what they did was to hire seven additional mill powers in the one case and three additional mill powers in the other case. In both cases all the additional power which they got was non-permanent, and was paid for at the rate of \$600 a year. But the three mill powers, the first three mill powers, as they are called in those two leases, were not additional power, but were merely a substitute for the surplus power which those companies had previously been using, were to be paid for at the same rate as before,—namely, \$1,500,—and were treated as coming in ahead of the really new or non-permanent power. That is our explanation of this mystery, and it shows that there never was any sale of non-permanent power at \$1,500.

The CHAIRMAN. Let me see, Mr. Matthews. One of these companies had six.

Mr. MATTHEWS. That was the Crocker.

The CHAIRMAN. They had the right to take 50 per cent., which was three mill power, by paying \$5 a day.

Mr. MATTHEWS. Yes, sir, and they did it. That is what we want to show.

The CHAIRMAN. Now, then, what difference does that make? Now we come from the six to the ten. Your claim is that there were only seven, and that the three were not taken.

In fact, if everything is taken, it would be first six, then three, then ten. Now you say they didn't do it?

Mr. MATTHEWS. That is what they didn't do. We want to show by this witness that they didn't use surplus after the new lease.

The CHAIRMAN. Didn't do what?

Mr. MATTHEWS. The instant this new lease became operative, the Crocker Manufacturing Company ceased to use its three surplus mill power, but did use the three \$1,500 so-called non-permanent. That is our contention. We have already shown that there were collateral agreements. We have already shown that there was a difference in the restricted days; that those three mill power were not restricted as many days as the others. And now we want to complete our evidence on this point by showing the identity between the three surplus and the three \$1,500 so-called non-permanent power which they got under this lease, by showing that the instant that that lease became operative, so that the Company became entitled to those three additional mill powers, they ceased to use their three surplus mill powers. This witness can testify on that, unless my friends object, when we shall prove it by the records. I saw the records yesterday, and I am prepared to substantiate this claim by the records themselves, which show that the Crocker Manufacturing Company stopped instantly the use of the three surplus mill powers which they had before, and took the three so-called \$1,500 non-permanent powers in their place. They paid the same price, and the only difference to them by that transaction was that they could use seven additional mill powers for which they paid \$600. Of course, I can show it from the records, if I can't show it by this witness.

The CHAIRMAN. You are not going to raise any question on that, are you? I don't understand they raise that question.

Mr. BROOKS. No, and we said so an hour ago.

Mr. GOULDING. I am only going to discuss the legal question, as far as I am concerned. I do not know whether any newspaper reporter is here to hear the learned counsel renew his accusations of concealing things, and all sorts of im-

putations of that kind. I am going to argue simply the legal question, nothing else. We have heard this thing exploited a number of times. If I was going to give lessons to anybody about the trial of cases, one of the things I should advise counsel would be not to keep stating in full the whole strength of their argument, so that the other side would know it. Now we have learned it and understand it; we do not need any further instructions about it, and I do not believe your Honors do. The question now asked of this witness is whether the Crocker Paper Company, whose mill is upon another level, ceased to take up to 50 per cent. its surplus power under its rights existing prior to the date of the instrument of 1895 or 1896,—1895, I think, May 1; whether they ceased then to take their surplus water up to 50 per cent. under their prior right. Now the ground on which that evidence is offered is to construe the lease of May 1, 1895, and to show that, whereas by its terms it grants ten non-permanent mill powers, three at one rental and seven at another, yet that, truly construed, it does not grant any such power, but grants a 50 per cent. surplus power, or a power that is analogous to that; and they propose to show it by showing that the Crocker Paper Company has not surrendered its rights under the application for surplus power and the rights it had by record, but by ceasing to use them, and that is to construe this instrument. And, paying as close attention as possible to the argument that we have heard over and over again, and seeing if there is a thread of reason in it, we detect dimly the proposition that they rest their offer on the conduct of the parties. Now the conduct of the parties as construing an instrument is a rule that is never resorted to unless there is some ambiguity in the instrument itself, which cannot be read otherwise. It is one of the last things resorted to, one of the last rules resorted to, when there is an ambiguity in the instrument so that you cannot understand its terms. Now there is not an intimation from any source, there is not an argument,—and, if there was an argument, it could not be sustained for a moment,—that there is any ambiguity in the instrument of May 1, 1895; not at all. By terms that are explicit and full and unambiguous, it grants

these seven non-permanent mill powers and these three non-permanent mill powers exactly in the terms that have been granted in other cases. So that the rule of the conduct of the parties is excluded by the plainest fundamental principles of legal reason; and that, I submit, is an end of it. Can your Honors, sitting on that bench as lawyers, find that the instrument does not mean what it says because the parties, having other rights, did not see fit to act under them? Must we go into the question, and inquire why it was that the Crocker Company, after the execution of that instrument, saw fit to use these non-permanent mill powers for which they paid \$1,500 per year, just as we said they did, and \$600, or whatever the amount was, for the other seven? Must we go into the reasons for that? How do your Honors know anything about it? How is it material to any inquiry here whether they did or did not? They have the right to use them. If they had the business, they would use them. That is their own affair. But the conduct of the parties cannot be resorted to to explain an instrument until it is first shown to be ambiguous. Now there is no ambiguity in these instruments. Suspicions,—things that float in the air,—which in the minds of some people who start out with a proposition that everybody but themselves is dishonest are strong as proof from holy writ,—those vague suspicions, those insinuations, those newspaper clippings, those newspaper paragraphs that they inspire, because it could not be possible that two people could use the same phraseology about the same thing so closely as the newspaper arguments are in accordance with the arguments of counsel on the other side,—all those things do not amount to any ambiguity. You must find the ambiguity in the instruments themselves; then you may go out and see what the conduct of the parties was. I submit, gentlemen, that there has not been a suggestion here of any reason for the admission of the fact, if fact it were, that the Crocker Company, after that perfectly clear contract by which they purchased their rights, did not use other powers which they held under other rights.

Mr. MATTHEWS. I would like to call the Commissioners'

attention to the last clause in Article IX. of these agreements for surplus power ; it is this : —

“ Should any party drawing surplus power under this agreement desire to terminate it and rest solely upon the original indenture, it has only to terminate all drafts of water not granted by those indentures.”

In other words, no formal cancellation of the surplus agreements is necessary to terminate them. They are terminated by disuse. All that I have to say in reply to my brother is that the question is not what the Holyoke Water Power Company has covenanted to get or what somebody else has covenanted to pay to the Holyoke Water Power Company that fixes the market value of water power in Holyoke, but what in fact persons paid, and what the Holyoke Water Power Company has in fact been able to secure for non-permanent power. We say that this evidence, together with the collateral agreements they produced, which were put in the other day, are all admissible to show that this corporation never got \$1,500 a mill power for non-permanent power, and that in these two particular cases what they got \$1,500 a year for was not non-permanent power, but something different and superior in value to it.

The CHAIRMAN. As I understand the question, the Crocker Manufacturing Company has the right to six permanent mill power, which gives them a right,—and there is no evidence before us that they have ever discontinued it, or attempted to discontinue it ; that is, the Crocker Company or the Holyoke Water Power Company —

Mr. MATTHEWS. I will offer it now.

The CHAIRMAN. — To three surplus power,—there is no evidence of any arrangement, of any agreement, of any understanding, excepting the one that may be argued, that the Crocker Company have taken any steps to forego its rights which it can demand and enforce against the Holyoke Water Power Company for its three permanent mill power. That being the fact, whether they have stopped it or not, as bearing upon the construction of the rights of the Crocker Manufacturing Company, in our judgment is not competent, and we exclude the question.

Mr. MATTHEWS. We take an exception.

Q. Mr. Sickman, I will ask you another question.

The CHAIRMAN. We have ruled on the question, Mr. Matthews.

Mr. MATTHEWS. I said I take an exception, and I will now ask another question.

The CHAIRMAN. I beg your pardon.

Q. What was the Crocker Manufacturing Company entitled to in the way of surplus on the first of March, 1895?

Mr. BROOKS. The papers show.

Mr. MATTHEWS. Is that the objection?

The CHAIRMAN. I suppose so.

Mr. MATTHEWS. Then I will introduce the paper.

The CHAIRMAN. Hasn't it been already introduced?

Mr. MATTHEWS. I tried to get it in. I will offer the agreements under which the Crocker Manufacturing Company was taking surplus power on the first of March, 1895, being the papers marked A and B, S. M. S., and dated respectively July 25, 1881, and Nov. 7, 1881.

Mr. BROOKS. May I see them a moment? And I would like a ruling on that.

The CHAIRMAN. If it is for that purpose, Mr. Matthews, we will admit that; if it is for the purpose of showing how much surplus, we will admit the papers.

Mr. MATTHEWS. That is the purpose. And at the same time I offer the George R. Dickinson,— what was marked C, S. M. S., a corresponding paper relating to the George R. Dickinson Paper Company.

The CHAIRMAN. Very well.

Mr. MATTHEWS. Now those papers go in.

Mr. BROOKS. I don't know whether they do or not.

Mr. GOULDING. I suppose your Honors will hear us. We think they are not competent.

The CHAIRMAN. Under my ruling, I don't see how they can be otherwise than competent.

Mr. BROOKS. Perhaps your Honor may find that one of the papers did not relate to the Crocker Manufacturing Company.

The CHAIRMAN. Perhaps you better look them over. Go forward with Mr. Sickman.

Mr. MATTHEWS. This is all I have left to ask. I don't see how I can put my next question until that is settled.

The CHAIRMAN. All right.

Mr. BROOKS. (After examining papers.) We think that these cannot be admitted, both of them. One is to the Dickinson & Clark Paper Company of Nov. 7, 1881.

The CHAIRMAN. I understand. That was what was in yesterday.

Mr. BROOKS. Excuse me; the other is to the Crocker Paper Company, July 25, 1891. Now the surplus agreement with the Dickinson & Clark Paper Company cannot pass to the Crocker Paper Company. The Crocker Paper Company have no rights, and can obtain no rights in it, may it please your Honor. So that all the surplus power the Crocker Manufacturing Company are entitled to, they are entitled to under their agreement of July 5, 1881, which was for two 50 per cent. surplus powers of 24 hours.

Mr. MATTHEWS. Then, if this is my brother's statement, I will ask the Commission to adjourn to Holyoke, where we can see the books of the Company which I saw yesterday, which credit the Crocker Manufacturing Company with the right to draw three non-permanent mill power.

The CHAIRMAN. It appeared — unless I am greatly mistaken, it appeared by evidence yesterday that the Crocker, or the successors —

Mr. BROOKS. I am talking now with reference to the admissibility of this agreement, not what the Holyoke Water Power Company may have sold them thereafter in the way of surplus power; and it seems to me that is the question that we should be confined to at the present time. If your Honors care to see this, I should be glad to have you.

Mr. MATTHEWS. If you raise the point, we wish to show the conveyance from the Clark & Dickinson Paper Company to the Crocker Manufacturing Company; is that your point?

Mr. BROOKS. No, sir; I say there is nothing the Clark &

Dickinson Paper Company can convey in the way of surplus power. These agreements are not to the successors or assigns of anybody. They are with the distinct individual or partnership or corporation.

The CHAIRMAN. Yes ; but, if your Company in fact has accepted the Crocker Company and treated the Crocker Company the same as the Dickinson & Clark, why can't he show that ?

Mr. BROOKS. The Crockers have had surplus power the same as every other mill in the city of Holyoke.

The CHAIRMAN. In effect, as I understand it, they have had six permanent power, which gives them a right to three —

Mr. BROOKS. The question now is, Shall these agreements be admitted in evidence? There is no agreement between the Holyoke Water Power Company and the Crocker Manufacturing Company which gives them a right to three surplus powers up to 50 per cent.

The CHAIRMAN. Well, I think the agreements ought to be admitted for what they are worth ; I don't know what they are.

Mr. BROOKS. We would like to take an exception to the admission of the Dickinson & Clark, if your Honors please.

Mr. MATTHEWS. I will read them, not the regulations, but the substance of the printed contract :—

HOLYOKE, MASS., July 25, 1881.

To the Treasurer of the Holyoke Water Power Company :
Sir, — The Crocker Manufacturing Company may from time to time desire to draw surplus power, in addition to the four mill powers to which we are entitled by day, and the four mill powers to which we are entitled by night, under indentures with the Holyoke Water Power Company ; and it is agreed that such draft shall be made under the foregoing regulations, to which we agree, and to which we will conform. And we also agree to pay, at the times and at the rates as hereinbefore provided, the sums due from us to the Holyoke Water Power Company for the use of said surplus power.

(Signed) The Crocker Manufacturing Co.

By D. P. Crocker, Treasurer.

Annexed to that are the printed regulations.

Mr. COTTER. Have the Water Power Company acted on that?

Mr. MATTHEWS. I suppose so. They are produced by the Company in consequence of our request.

Mr. GOULDING. That don't answer the Commissioner's question.

Mr. MATTHEWS. I will ask the witness that question.

Mr. BROOKS. We make no question with reference to the agreement of the Crocker Manufacturing Company..

The CHAIRMAN. Here is the question to Mr. Gross yesterday :—

“Q. Do you know, Mr. Gross, what the Dickinson & Clark Paper Company was and its relation to the George R. Dickinson Paper Company, so far as the leasing of power goes? A. I suppose that was the predecessor in title to the the Crocker.

“Q. You mean the George R. Dickinson Paper Company, don't you? A. Let me look at it; I thought this supplemented the Crocker.

“Mr. BROOKS. That is just what he means, the Crocker.

“Mr. MATTHEWS. I should have said, then, the Crocker instead of the George R. Dickinson Paper Company.

“The WITNESS. They were predecessors in title to a portion of the power subsequently acquired by the Crocker Manufacturing Company.”

I don't think you need any more testimony than that, Mr. Matthews.

Mr. MATTHEWS. It doesn't seem to me that I do.

Mr. BROOKS. That does not allow a written instrument to go in, as I understand the rules of law. They had no right — the Dickinson & Clark Company under this written instrument, or any other arrangement, had no right to convey to the Crocker Manufacturing Company, however the Water Power Company may have treated them.

The CHAIRMAN. We will take the evidence.

Mr. MATTHEWS. I will read the substance of Exhibit 244, which is a form of agreement under date of Nov. 7, 1881.

Mr. BROOKS. I except to that.

Mr. MATTHEWS. (Reading.)

To the Treasurer of the Holyoke Water Power Company :
Sir,— The Dickinson & Clark Paper Company may from time to time desire to draw surplus power, in addition to the two mill powers to which we are entitled by day and the two mill powers to which we are entitled by night, under indentures with the Holyoke Water Power Company or its predecessors ; and it is agreed that such draft shall be made under the foregoing regulations, to which we agree and to which we will conform. And we also agree to pay, at the time and at the rates as hereinbefore provided, the sums due from us to the Holyoke Water Power Company for the use of said surplus power. The right to use and charges for the use of surplus power to commence Jan. 1, 1882, and we to be entitled to a discount of one-sixth ($16\frac{2}{3}$ per cent.) on all bills for surplus power contracted during the six years next following.

Now the third one—before I pass to the next one, I will ask this witness what amount of surplus power the Crocker Manufacturing Company were drawing—

Mr. BROOKS. Well, you need not answer that.

Mr. MATTHEWS. — Prior to March 1, 1895.

Mr. BROOKS. We object to that.

The CHAIRMAN. We exclude that, Mr. Matthews.

Mr. MATTHEWS. I now repeat the question for the purpose of connecting the Dickinson & Clark Paper Company with the Crocker Manufacturing Company, if that be necessary.

The CHAIRMAN. We don't think it is necessary.

Mr. MATTHEWS. You think it is already sufficiently connected?

The CHAIRMAN. Under the present condition of the record, we think it is.

Mr. GOULDING. I want it understood that we raise the question as to Mr. Gross's oral statements making a title to real estate. You look at the date of this application, and you will see that the Crocker application precedes the Dickinson application by six months—five months.

Mr. MATTHEWS. The third paper—

Mr. GOULDING. Mere impressions of Mr. Gross won't amount to a title of real estate.

Mr. MATTHEWS. Do I understand the Commission —

The CHAIRMAN. We have excluded the question, Mr. Matthews, I think, already.

Mr. MATTHEWS. Excluded on the ground that it is sufficiently connected?

The CHAIRMAN. We have already expressed our opinion. I have read that statement by Mr. Gross, confirmed by Mr. Brooks.

Mr. MATTHEWS. Very well, sir. Now the third paper is Exhibit 245, which is an agreement signed by George R. Dickinson, dated Jan. 14, 1882. And I will read that.

George R. Dickinson may from time to time desire to draw surplus power, in addition to the six limited mill powers to which I am entitled by day and the six mill powers to which I am entitled by night, irrespective of the three additional night mill powers conveyed to me, which are to be paid for at surplus rates, when drawn under indentures, with the Holyoke Water Power Company or its predecessors, to be used on my Sargeant Street lot out of the upper level; and it is agreed that such draft shall be made under the foregoing regulations, to which I agree and to which I will conform. And I also agree to pay, at the times and at the rates as hereinbefore provided, the sums due from me to the Holyoke Water Power Company for the use of said surplus power, I am to be entitled to a discount of one-sixth ($16\frac{2}{3}$ per cent.) on all bills for surplus power contracted during the six years next following Jan. 1, 1882.

Mr. BROOKS. Now, may it please your Honors, we object to the reception of that. That is a contract between the Holyoke Water Power Company and George R. Dickinson, not between the Holyoke Water Power and the George R. Dickinson Paper Company. Is that admissible under any rule of evidence known?

Mr. MATTHEWS. The leases have already gone in to the Dickinson Paper Company in just that form. One of them was to George R. Dickinson himself and the other to the

George R. Dickinson Paper Company, and you will find that is in Vol.—

Mr. GOULDING. In Vol. VI., George R. Dickinson conveyed to George R. Dickinson Paper Company.

Mr. MATTHEWS. Yes. Now Mr. Brooks wants us to put in the record of the conveyance.

Mr. BROOKS. Not at all. My point is—I suppose I have not made it clear—that there was not anything for George R. Dickinson to convey of 50 per cent. surplus. It was a personal contract; and, if your Honors look at the contract, you will see that he could not convey it to anybody. It is personal with him, limited to him, just the same as with the Dickinson & Clark Paper Company.

The CHAIRMAN. You mean to say that there is no rule by which the owner of a lease—I could lease a property without any right to transfer; but I do transfer it, and my landlord acknowledges and treats the other fellow,—do you mean to say that that cannot be done?

Mr. BROOKS. That is entirely a different question. It is not this question. They seek to put in a personal agreement between George R. Dickinson and the Holyoke Water Power Company for surplus water, and under the terms and regulations of that agreement by Mr. Dickinson any time substantially that he sees fit, under a year's notice; and if there is any evidence that—and, of course, as my friend suggests, George R. Dickinson has been dead for many years.

Mr. MATTHEWS. Perhaps I can supplement this.

The CHAIRMAN. You raise this question, do you, Mr. Brooks?

Mr. BROOKS. Of course, we raise that.

The CHAIRMAN. Then we think that, under the circumstances, Mr. Matthews may be allowed to show the action between the parties with reference to this water; how they treated that, in order to show the relationship of the parties. If you wish that to go in, we will allow it. Go ahead, Mr. Matthews.

Mr. BROOKS. We want to be heard upon that when the time comes.

The CHAIRMAN. That was a suggestion made by Mr. Cotter, and I thought it was a good one. I think this evidence better go in in some form, to examine afterwards, in the light of the papers and in the light of the questions that may come up to-day.

Mr. BROOKS. Haven't we in evidence already the surplus power used by the various mills?

The CHAIRMAN. Yes, the 50 per cent.

Mr. BROOKS. Certainly, the 50 per cent. This all shows, Mr. Matthews, right from the previous evidence. Why should we encumber the record, this tremendous record, with all these agreements that have nothing to do with it? that is what we are endeavoring to get at. It is all in evidence. There is no dispute about it; but that gives them no right to put in this, your Honor. It runs back only a few months; and, if my memory serves me correctly, you will find that the Crocker Paper Company are credited with a certain number of mill powers of 50 per cent. surplus; so the same of the George R. Dickinson Paper Company, just the same number that my brother says they are. What is the good of having an agreement go in,—three agreements, agreements that will cover ten pages or more of this record?

Mr. MATTHEWS. Will you point out the evidence that will show that the Dickinson Company is entitled to three mill power surplus per year up to March 1, 1895—

Mr. BROOKS. I think it has been put in, in tabular form.

Mr. COTTER. It seemed to me, when I made the suggestion to the Chairman, and it seems to me still, that the action of the parties, how the parties treated that agreement, may be of some assistance, and may be of assistance to the Court upon the question of law as raised in these agreements.

Mr. GOULDING. Isn't it true that the action of the parties can be resorted to only when there is an ambiguity? And what ambiguity is there about that agreement? It is within the resources of this Commission, I think, to look at that agreement and tell us what the construction of it is as a matter of law. If it is ambiguous, then I admit you might put in the action of the parties, but not otherwise.

Mr. COTTER. That is what we mean, Mr. Goulding ; but whether this agreement has any vitality whatever, whether it has passed to the Crocker Company, whether they had any right under it. They may, if the parties themselves dealt with it in a way which they regarded as binding upon them,—it may be there are certain rights that you want on record.

Mr. GOULDING. I don't know, when an agreement is made by John Smith, that any act of the parties will give any title under that instrument to James Brown, unless he is originally connected with it.

Mr. MATTHEWS. I think there is something in Mr. Brooks's suggestion that if this matter is already in the record it would not be competent for me to inquire into it further ; but I have consulted with my associate, and he states that there is nothing of the kind in the evidence.

Mr. CHAIRMAN. Mr. Brooks, what is your question ?

Mr. MATTHEWS. My simplest way, then, is to ask the question.

Q. How much 50 per cent. surplus day power was the George R. Dickinson Paper Company drawing on or before March 1, 1895 ? A. I don't remember now.

Q. What ? A. I don't remember now.

Q. Well, how much were they entitled to, according to the practice of the Company ?

Mr. BROOKS. Wait a minute ; we object to that.

Q. How much were you giving them, according to the practice of the Company ?

Mr. BROOKS. We object to that question.

Mr. MATTHEWS. I admit it is objectionable, but I suppose Mr. Sickman's testimony was to be accepted in lieu of the records. I do not see any way, your Honors, but to have the records admitted ; they will tell the whole story.

The CHAIRMAN. To be entirely frank with you, Mr. Matthews, the Commissioners are getting very impatient.

Mr. MATTHEWS. I understand it, but here is an important fact which I have been spending three days trying to get in.

The CHAIRMAN. I do not see any reason why it should

be objected to. As the custody of the records is in the control of the petitioner, I do not see any reason why it should not appear here in two words how much surplus the Dickinson is entitled to and how much the Crocker.

Mr. BROOKS. I say it has appeared.

The CHAIRMAN. If it has, what harm would it do to let it appear again? How much do you say it is, Mr. Brooks?

Mr. BROOKS. I could state.

The CHAIRMAN. You are not called upon to.

Mr. BROOKS. I would just as soon. I understand that the George R. Dickinson Company have used, since March 1, 1881, if that is the date, three surplus powers up to 50 per cent. I understand the Crocker have had three surplus powers up to 50 per cent.

The CHAIRMAN. All right.

Mr. BROOKS. I do not agree that that makes the agreement competent evidence.

Mr. MATTHEWS. That is not the point, if your Honors please; it is not what they have used; it is what they were using on the first of March. Mr. Brooks says that they began to use in 1881 three surplus mill powers. We say they did, but we say they stopped March 1, 1895.

Mr. BROOKS. I understood that question had been ruled on.

Mr. MATTHEWS. I know; and I do not want to raise it again, Mr. Brooks, except to disagree with your statement of the case. I do not see any way, your Honors, but to put the records in, if they are admissible.

The CHAIRMAN. After the statement that Mr. Brooks has made, we will not allow the question to go any further. We understand Mr. Brooks to state—if I misstate it, all right—that the George R. Dickinson Paper Company under these different papers has been using three surplus mill powers since 1881. Now, Mr. Matthews,—

Mr. MATTHEWS. We decline to accept that statement; we say it is not so. I fail to make myself understood.

The CHAIRMAN. Let me restate it.

Mr. MATTHEWS. Yes, sir.

The CHAIRMAN. I understand that Mr. Brooks says that the George R. Dickinson Company have the right, under their papers, to use three surplus mill powers because they have six permanent mill powers,—I may get the number wrong.

Mr. MATTHEWS. They have not six permanent; they have six non-permanent day powers.

The CHAIRMAN. Well, you state it yourself, Mr. Matthews.

Mr. MATTHEWS. Well, sir, I cannot accept Mr. Brooks's statement.

The CHAIRMAN. Let me try it again.

Mr. BROOKS. Let mine be stricken out.

The CHAIRMAN. I understand, and we will hold, unless somebody objects to it, that the Crockers have the right to draw six permanent mill power, that they have a right to draw three surplus mill powers, and the question of whether they have drawn that amount or not we exclude.

Mr. MATTHEWS. That we do not understand to be the facts of the case at all.

The CHAIRMAN. What do you understand to be the facts of the case?

Mr. MATTHEWS. We understand the facts of the Crocker case to be that they had the right to use three surplus mill powers.

The CHAIRMAN. Yes.

Mr. MATTHEWS. On account of their six permanent mill powers, up to the first of March, 1895.

The CHAIRMAN. Very well.

Mr. MATTHEWS. And that thereupon they discontinued the use of their surplus power; and we contend that, under the last sentence in Article IX. of the agreement for surplus power, that discontinuance terminated the agreement. They did not use any more surplus power, so far as we are aware. They may have done so since, or they may not. Those we understand to be the facts of the case.

The CHAIRMAN. You understand that they cannot use the surplus power?

Mr. MATTHEWS. I do not know what they can do now, but I know that they did not do it.

The CHAIRMAN. Didn't you understand us to rule some time ago on the papers, so far as they were before us, you could not show whether they had been using surplus power or not since 1895? Didn't you understand that?

Mr. MATTHEWS. Yes, we understand that.

The CHAIRMAN. Then how do you and I disagree on this subject?

Mr. MATTHEWS. Why, because you assume in your statement that they have been using this surplus power during this time.

The CHAIRMAN. No, I don't, either.

Mr. MATTHEWS. Or have had a right to use it. We deny that they have used or have a right to use it. Our contention is that on the first day of March, 1895, the whole agreement for surplus power dropped, because they had three non-permanent mill powers substituted at the same price for the same amount of surplus water.

The CHAIRMAN. Where is any evidence that they dropped it?

Mr. MATTHEWS. I have asked this witness over and over again, and the question has been excluded.

The CHAIRMAN. Yes, because you have asked the fact whether they used it. We say under these instruments that started with the Crockers that they still have the right to use it.

Mr. MATTHEWS. Not if they discontinued it. Perhaps the Commission did not catch the force of this sentence that I have read. Here it is again, the last sentence of Article IX.:

"Should any party drawing surplus power under this agreement desire to terminate it, and rest solely upon the original indentures, it has only to terminate all draft of water not granted by those indentures."

We say that on the termination of the draft of water—that is, on the discontinuance of the use of surplus water—the surplus agreement fell to the ground.

The CHAIRMAN. Do you mean to say that on that the Crocker Company cannot go into court and compel the Holyoke Water Power Company to furnish them surplus water?

Mr. MATTHEWS. Certainly, unless they had a subsequent agreement, either oral or written.

The CHAIRMAN. How do you know that they have terminated the agreement, unless they had actually discontinued the use?

Mr. MATTHEWS. That would be the best evidence,—that they had ceased to use it.

Mr. GOULDING. This construction of my friend's of Article IX. is worthy of a comic opera, it seems to me.

The CHAIRMAN. Let us go forward, if we can.

Mr. MATTHEWS. I now offer all the records of the Holyoke Water Power Company, which are contained upon large sheets of paper, one for each month, during the years 1894, 1895, 1896, and 1897, in so far as they relate to the use of surplus power by the Crocker Manufacturing Company and the George R. Dickinson Paper Company, and in so far as those sheets show the amount of surplus power that those two companies were respectively entitled to at these several dates and the amount that they actually used. I make this offer of proof for the reasons that have been stated this morning, and I do not suppose the Commissioners care to hear me restate them.

Mr. GOULDING. We object, not on the ground that the sheets are not here, but on the ground that the evidence is not competent and has no relevancy.

The CHAIRMAN. We exclude it, Mr. Matthews.

Mr. MATTHEWS. We except.

Mr. BROOKS. I want what I said with reference to these mill powers, in view of Mr. Matthews saying that he would not accept it, to disappear from the record.

Mr. MATTHEWS. I do not know that my offer of proof was entirely clear. I offer these records not only for the purpose of showing the fact that the Crocker and Dickinson companies substituted three so-called \$1,500 non-permanent powers

for the surplus power that they had previously been using, and for the purpose of showing that those three so-called non-permanent powers were in reality surplus and not non-permanent at all, but for the further purpose of showing action by these two companies under the last sentence of Article IX. of the agreements for the use of surplus power which have been admitted in evidence, as showing a termination of their contract rights under those papers.

The CHAIRMAN. We have admitted the three papers offered by Mr. Matthews, and let those stand, subject to any further examination on our part as to whether they are admissible or not. We do not think it is quite fair, Mr. Matthews,—at least, I do not, for one,—for you to make any such proposition as that, based upon records, unless you can bring to our attention specifically the fact that those records themselves contain the last proposition that you make.

Mr. MATTHEWS. I don't understand.

The CHAIRMAN. Is there anything contained in those records, Mr. Matthews,—because, of course, we do not want to have anything go in here that is not so,—is there any evidence in those records, excepting the bare action of the parties in fixing amounts and all that sort of thing, that goes to show that there was any agreement, any writing, between the Dickinson and the Crocker and the Holyoke Water Power Company by which one was substituted for the other?

Mr. MATTHEWS. What those records will show, your Honor, is this: they are, in the first place, records kept by the Holyoke Water Power Company by Mr. Sickman. That is right, isn't it, Mr. Sickman?

The WITNESS. Yes, sir.

Mr. MATTHEWS. They show in the left-hand column the amount of power to which the mills are respectively entitled. Each mill is put down separately under each month, so that for each month there are three or four sheets for day power and a corresponding number for night power. The day sheets are printed on white paper and the night sheets on yellow paper. Now the first column, as I stated, indicates the total number of

mill powers to which the corporations are entitled. Then the body of the sheet is taken up by a statement of the amount of power actually used and the amount of surplus used by each of these mills on each day of the month, so that the whole makes a continuous record for the entire year. We offer those records for the purpose of showing that prior to March 1, 1895, or rather prior to the time when the agreements of March 1, 1895, became operative,—because, if your Honors will recollect, there was a postponement in them for a longer or shorter period,—prior to the time when those agreements of March 1, 1895, with the Crocker and Dickinson companies became operative, both those corporations were using large quantities of surplus power, practically up to their full right, which amounted in each case to three mill power; that, just as soon as these agreements of March 1, 1895, became operative, the use of surplus power by those two corporations ceased. We offer that evidence in connection with the leases themselves of March 1, 1895, with the collateral agreements, if there were any, and with the fact that has already appeared in evidence in this case, that the use of water power was restricted differently for those three mill power running at \$1,500, and which we claim were a mere substitute for the surplus, than was the use of water for the remaining seven in one case and three in the other. We offer those records in connection with that evidence to show that these three so-called first non-permanent mill powers in these two indentures of March 1, 1895, were not non-permanent mill powers at all, but a different and superior grade of water power.

Mr. GOULDING. That, I think, has been passed upon by this Commission.

Mr. MATTHEWS. I understand so. I am simply restating my offer, that is all. I will take the ruling of the Commission, and ask the stenographer to note an exception.

Mr. GOULDING. It is hardly necessary for us to enter upon a discussion of the construction of this ninth rule, which bears no construction such as the counsel put upon it.

The CHAIRMAN. Go ahead, Mr. Matthews, on something else.

Mr. MATTHEWS. I understand it is excluded, and we except.

The CHAIRMAN. Yes.

Mr. BROOKS. I want to say one thing, your Honors. I was evidently mistaken when I told your Honors that the George R. Dickinson Paper Company were entitled to three mill powers of 50 per cent. surplus; they were not. They had no permanent power, and under the very indenture that my friend puts in they were only entitled to common surplus power. I had asked previously to have what I said stricken from the record, but in view of the refusal to have it stricken out I desire to put myself right, and not to prejudice the Company by any admission that I may have made.

The CHAIRMAN. The paper speaks for itself, doesn't it?

Mr. COTTER. Mr. Matthews, permit me to ask one question. You do not claim that there is any express agreement modifying or changing the indenture which is put in evidence relating to the mill power?

Mr. MATTHEWS. We have no evidence of any written agreement, but we think that the circumstances themselves and the conduct of the parties show either one of two things,—either that the word “non-permanent,” as written in those leases of March 1, 1895, was not intended by the parties to be non-permanent, but 50 per cent. surplus, or else that it was a deliberate attempt to deceive the public and the community of Holyoke into thinking that the Holyoke Water Power Company was getting \$1,500 a year for non-permanent water power.

Mr. GOULDING. What interest had the community or the public in it, anyway?

Mr. MATTHEWS. In the market price of water power, you might enter into a fictitious or collusive lease of water power, at \$1,500, whereas you might be getting, as a fact, only \$600; or you might be giving them a different kind of power. In either case the figure \$1,500 would be deceptive.

Mr. BROOKS. It is the same old accusation.

Mr. MATTHEWS. Certainly, it is the same old thing. It began at the beginning of the case, and it is going to continue to the end of it, Brother Brooks.

Mr. GOULDING. That will be the end of it forever.

Mr. MATTHEWS. I don't believe that this Commission, after excluding this evidence, after refusing to permit us to show that you never sold any water power for \$1,500, is going to find that you ever did.

Mr. BROOKS. Is it time to argue that now?

The CHAIRMAN. Oh, let us go on with this evidence, and get through with it.

Q. Now I will ask you, Mr. Sickman —

The CHAIRMAN. Perhaps I indicate some degree of impatience. It is not to criticise you, Mr. Matthews. I understand that you and the counsel on the other side are dealing with a corporation fifty years of age, and it is a very difficult and complicated question for you to look up and go into all its branches; and I sympathize and appreciate. At the same time, we are a little bit tired of it, from our standpoint. Perhaps we are wrong about that.

Mr. MATTHEWS. Is it right to say that the Commission is tired of a line of evidence which was never suggested until this week? Or, rather, I should say, last Thursday afternoon was the first time, in our case, if your Honor please, that this point was raised; and I do not think that the record should state, without some qualification, that the Commission is a little bit tired, or tired to any extent, with our efforts, protracted though they may have been since last Thursday, with this line of evidence, because it was never mentioned by us until that time. We might have put it in earlier in our case, but it was our right to select the order of our evidence. We reserved this to the last, partly because it was the most important that we had to offer to the Commission,—exploding, as we think, completely, this \$1,500 story,—and partly because the books were at Holyoke, and we expected to come to Holyoke and get them there.

Mr. GOULDING. It is a boiler that won't explode.

The CHAIRMAN. Mr. Matthews, you take the wrong view of what I was trying to say. I was simply saying that the Commission sympathized with your efforts in going into these

questions ; they are difficult questions to investigate, and we do not want in any degree to limit you. At the same time, you must appreciate the fact that we would like to conclude this question after you have thoroughly exploited your theory. We don't want to limit you a bit ; it is our business not to. You need not feel that we are not disposed to hear you. But, on the other hand, we would like to have the matter closed up as soon as we can without —

Mr. MATTHEWS. We share in that desire, I am certain. We want to get the case closed, and our side of it in, as rapidly as possible.

The CHAIRMAN. Let all that discussion go off the record, Mr. Matthews.

Mr. MATTHEWS. I don't know, sir. I think it ought to be left. There have been a good many statements from the Commission lately that indicate impatience with our method of trying this case. I think, on the whole, I can sympathize with them. It has been tedious. It is impossible for any three men, who are not employed and paid as counsel, to keep track of this evidence, to follow all these papers and complicated details, and bear them in mind, and I bear no resentment. But I do think, in this particular matter, which never was suggested by Mr. Green and myself until Thursday last, that the Commissioners are perhaps a little forgetful.

The CHAIRMAN. We must have patience, Mr. Matthews. We have no criticism at all to make.

Mr. MATTHEWS. I have no further questions to ask on this subject. But Mr. Brooks's statement leads me to ask this question of Mr. Sickman. (To the stenographer.) Read Mr. Brooks's statement.

(The stenographer read as follows) :—

“Mr. BROOKS. I want to say one thing, your Honors, I was evidently mistaken when I told your Honors that the George R. Dickinson Paper Company were entitled to three mill powers of 50 per cent. surplus. They were not. They had no permanent power, and, under the very indenture that my friend puts in, they were only entitled to common surplus power.”

Mr. MATTHEWS. Strike it all out ; I understand that the records themselves will show.

Mr. BROOKS. Strike what out? Don't strike my statement out.

Mr. MATTHEWS. No, we claim that these records, if produced, will show that the Dickinson Paper Company did get 50 per cent. surplus, in the strict sense of the word, up to three mill powers.

Mr. BROOKS. Do you want the records?

Mr. MATTHEWS. We have asked to put them in, and the Commission has shut them out.

Mr. BROOKS. I don't want to have it said hereafter that we refused to produce the records.

Mr. MATTHEWS. I understand that you produced the records, and object to their admission.

Mr. BROOKS. You have had them all.

Mr. MATTHEWS. Undoubtedly we have seen them ; I saw them yesterday morning. I understand our position, Brother Brooks, to be this : that the Holyoke Water Power Company produces the records, and objects to their admission. We offer them, and they are excluded.

Mr. BROOKS. Yes.

Mr. MATTHEWS. That is the situation, isn't it?

Mr. BROOKS. Yes, I agree to that.

The CHAIRMAN. If there is going to be a question of fact with reference to the Crocker use of permanent and the Dickinson use of permanent,—the right to use,—I think the records should be brought forward.

Mr. BROOKS. May it please your Honor, there is nothing in the records to show, as I understand it, anything that would contradict the agreements that your Honors have seen fit to receive in evidence. I don't suppose you can contradict those agreements. My friend, you see, would not take what I said this morning,—said he would not agree to it. I agree that he was right in it and I was wrong, and that the George R. Dickinson did not have a right to draw 50 per cent. surplus, because they had no permanent power.

Mr. MATTHEWS. That is our case, may it please your Honors.

Mr. BROOKS. Now I would like those subsidiary agreements that were put in the other day,—the Parsons, Mackintosh, Linden, Norman, and so on. It is necessary for me to ask Mr. Sickman with reference to them. They came in, as your Honors will remember, through Mr. Gross; and I asked him certain questions about them, and it was objected to because he had not absolute personal knowledge, and I said that I would put in the testimony with reference to them through Mr. Sickman. Now will somebody give me those subsidiary agreements?

The CHAIRMAN. I cannot.

Mr. GREEN. 'I haven't them.

Mr. GOULDING. Were they left with the stenographer?

Mr. BROOKS. Mr. Burt says they were not left with him. We haven't them. Now how can we find them?

Mr. GREEN. They were put in in Boston. You will find them referred to in the record of the seventieth day, Mr. Brooks, beginning on pages 222 and 233.

Mr. BROOKS. Was that Friday?

Mr. GREEN. That was Friday, the 26th.

Mr. BROOKS. Now it is rather important we should find those, may it please your Honors. I have but very few questions to ask Mr. Sickman. I was going to try to get along without those. If I can't, I may desire to put in some evidence later.

Re-direct examination by Mr. BROOKS.

Q. Mr. Sickman, there was a subsidiary agreement between the Parsons Paper Company and the Holyoke Water Power Company with reference to non-permanent water. Do you recall it? A. Yes, sir.

Q. For how many years did the Parsons Paper Company pay for that water power comprehended by that subsidiary agreement before they used it?

Mr. GREEN. We object.

Mr. BROOKS. I might state that it has been put in on Thursday or Friday of last week.

Mr. MATTHEWS. We object on the same ground raised by our friends, when we sought to introduce the actual use of power by the different mills.

Mr. BROOKS. We don't seek to offer the actual use. They put in certain subsidiary agreements for the purpose of showing, as they said, that there were secret understandings,—something of a malevolent nature, as my friend said, substantially; and, while in the lease, they leased the power with a certain rental attached to it, yet, in the secrecy and surreptitiousness of the combination between the mills and the Holyoke Water Power Company, they would enter into another and more villainous agreement. I seek to introduce it in explanation.

The CHAIRMAN. Go ahead and settle this.

Mr. COTTER. We think that the inquiry may be made on the suggestion that there was something irregular and in want of good faith in regard to these papers. As tending to meet that, we think the witness's explanation may be made.

Mr. GREEN. Do I understand that your Honor rules the explanation may be made? Perhaps I don't comprehend this question.

Mr. COTTER. It is to explain, when counsel calls attention to certain irregularities,—the suggestions by your side last week, of fraud,—to explain that. The witness may reply to the question now put.

Mr. GREEN. I understand this subsidiary lease, as it is called,—collateral lease, as it is termed by us,—was to give a flat rebate for five years. That is as I have it in my mind.

Mr. COTTER. The agreement will speak for itself.

Mr. BROOKS. Yes, sir. Now will you repeat my question, Miss Powell?

(Question read by stenographer.)

Mr. GREEN. How many years did the Parsons Paper Company pay for the water power covered by the subsidiary agreement? Your Honor rules that is admissible?

Mr. COTTER. For the reasons assigned and stated, we think it is.

Mr. GREEN. Will your Honor please save us an exception on that?

Mr. COTTER. Yes, sir. The grounds for offering the evidence we understand appear by the record.

Mr. BROOKS. Yes, sir.

Q. How many years? A. About five years.

Q. Have you anything here that will tell the number of years? A. No, I have not.

Q. Now do you recall the subsidiary agreements, or, as my friend denominates them, the collateral leases, with the Crocker Manufacturing Company? A. I recall that there was such an agreement.

Q. Do you know why that agreement was entered into?

Mr. GREEN. I suppose that can be answered yes or no.

Mr. COTTER. Answer yes or no.

A. Yes.

Q. Why?

Mr. GREEN. I object.

Mr. BROOKS. I purpose to show, if I am asked for my offer, that at that time the Crocker Manufacturing Company were intending to build; that it was going to take them some time before they could get their building erected, and use the water; and that this subsidiary agreement was entered into, and the leases entered into, for the additional power, on that account, and instead of giving them an option, which might bind the Holyoke Water Power Company and might not bind the Crocker Manufacturing Company.

Mr. GOULDING. The whole being offered to rebut the presumption of any fraud, as being charged by the instruments not being recorded.

Mr. COTTER. Do you insist, gentlemen, on the suggestion of any fraud or any irregularity?

Mr. GREEN. I don't understand your Honor on that.

Mr. COTTER. If you do not, we see our way clear to exclude that. If, on the other hand, there is a claim of fraud, we deem it our duty to admit it.

Mr. GREEN. We don't understand that this witness took

part in the negotiations with the Crocker, or that he claims that he did. All he knows is something that was told him. I understand this witness took no part in the negotiations with the Crocker.

Mr. COTTER. Is that true, Mr. Witness?

The WITNESS. I took no part in the negotiations.

Mr. BROOKS. He might have taken no part in the negotiations, but he might have been present. I don't know whether he was present at any of the talks between Mr. Crocker and the representatives of the Holyoke Water Power Company or not.

Mr. COTTER. How is that, Mr. Witness?

The WITNESS. I was not.

Q. Then I will ask this question: How long after the subsidiary agreement was made with the Crocker Paper Company was it before they erected their mill, and began to use the full power comprehended in the lease of the ten non-permanent mill powers?

Mr. GREEN. To that we make the same objection. This might stand, possibly, on the same ground.

Mr. COTTER. We think that is fair. If he knows that, he may state.

Q. If you can state, Mr. Sickman, you may. A. The agreement was made before the mill was completed.

Q. And before the use of power? A. Yes, sir.

Mr. COTTER. You are to state from your own knowledge, Mr. Witness.

The WITNESS. Yes, sir.

Q. Now do you recall any subsidiary agreement with Mackintosh Sons Company? A. Yes, sir.

Q. I want to ask you now whether or not the Mackintosh Sons Company have ever used any of the night power that was comprehended by the lease and the subsidiary agreement, the dates of which I do not now know? A. They have not.

Mr. GREEN. We object. The question is as to the night.

Mr. COTTER. We think he may answer that.

Mr. MATTHEWS. We would like to ask how that differs

from the question we put, that, while parties might have one right by instrument, they might actually do another thing. That is exactly what we put. I am inclined to think this question of Mr. Brooks is admissible, but we think that ours was also.

Mr. COTTER. Then we agree on this. You think this is admissible, and Mr. Brooks thinks so.

Mr. MATTHEWS. It is the same question exactly as in the written instrument.

Mr. COTTER. We think he may answer the question.

Mr. GOULDING. The agreement provides that they were to do either one of two things. We offer to show which they did, as a matter of fact.

Mr. COTTER. It may be answered.

Q. Instead of using the water at night, what did they do with reference to the restrictions upon the day power?

Mr. GREEN. We object to that.

Mr. GOULDING. The instrument gives them the right to do one of two things.

Mr. BROOKS. To either take the night power or to take the rebate for times of restriction upon the day power.

Mr. COTTER. He may answer that question.

Mr. GREEN. You will save us an exception on that, please.

Mr. COTTER. Yes.

The WITNESS. They have taken the rebate for the day power.

Mr. COTTER. You have exceptions on both questions, Mr. Green.

Q. Mr. Sickman, how long after the lease to the Norman Paper Company of their non-permanent power and the subsidiary agreement was it before the Norman Paper Company built their mill and used the power granted by the lease?

Mr. GREEN. Just a moment. We have the same exception, of course, to that.

The WITNESS. I think it was a number of years. I don't know how many, but a number of years.

Q. How long was it after the lease to the Linden Paper

Company of their power and the execution of the subsidiary agreement before the Linden Paper Company built their mill and used the power granted by the lease?

The CHAIRMAN. The leases in evidence, we understand?

Mr. BROOKS. Yes, sir.

Mr. GREEN. We have the same exception.

The WITNESS. I think it was a number of years.

The CHAIRMAN. You are stating this from your own knowledge, are you, Mr. Witness?

The WITNESS. Yes, sir.

Mr. BROOKS. Can anybody tell me whether there was any subsidiary agreement with reference to the Parsons Paper Company, No. 2?

Mr. GREEN. Yes, there was.

Q. How long was it after the grant of the Parsons Paper Company No. 2 of their power and the execution of the subsidiary agreement before the Parsons Paper Company No. 2 erected their mill and used the power comprehended by the lease?

Mr. GREEN. We save the same exception.

Mr. BROOKS. Yes. I understand you except to it all.

A. I think about five years.

Q. What mills on the third level canal, Mr. Sickman, in the years past and in the present year, are shut down annually on account of high water? A. All the mills on the third level canal are troubled with back water.

Q. Would back water be high water? A. High water in the river, yes, sir.

Q. High water in the river? A. Yes, sir.

Q. Which drowns the wheels? A. Yes, sir.

Q. Can you tell the number of miles of street in Holyoke?
A. About 57.

Q. Can you tell the population and valuation of Holyoke for the various years from 1865 to 1898?

Mr. BROOKS. I put that in in my opening, and, if they are willing to agree to it, I won't put it in by Mr. Sickman.

The CHAIRMAN. Will you let me see the Crocker lease

made in 1895? I would like to look at it, Mr. Green. I would like to see all the papers connected with the Crocker.

Mr. GREEN. I have a copy of the Crocker indenture, certified by the clerk. It was never put in evidence, because they put their copy in. You may take it.

Mr. MATTHEWS. Among the papers there will be not only that lease, Mr. Chairman; there will be two agreements for surplus, and also a fact which is in evidence, showing the difference in use, the difference in the number of restricted days for the first three mill powers and the rest. That was put in last week some time. I don't remember when.

Q. Mr. Sickman, the schedule entitled "Population and Valuation of Holyoke from 1865" you prepared? A. Yes, sir.

Q. And from census returns? A. Yes, sir.

Mr. BROOKS. I offer this, may it please your Honors.

Mr. MATTHEWS. We object.

Mr. BROOKS. What is the objection?

Mr. COTTER. The witness can testify to his knowledge; but we don't think that schedule is competent, under objection.

Mr. BROOKS. Well, may it please your Honors, they have done it again and again.

Mr. COTTER. I know it has been done.

Mr. BROOKS. There is the Gas Commissioners' reports, and the census report is a public document.

Mr. COTTER. I know, but this is objected to; the census report is not here.

Mr. BROOKS. That is a curious performance. Most of this testimony should be stricken out in this case. I don't know whether your Honors can do it or not. I don't know of any reason — Mr. Sickman, take that.

Q. What was the population of Holyoke in 1865?

The CHAIRMAN. How does he know, if it is objected to?

Mr. BROOKS. Well, that has not been objected to until your Honor objected.

Mr. MATTHEWS. We understood our objection covered this schedule, as well as the table itself.

Q. Well, now, have you consulted the census report? A. I consulted the State census report.

Mr. BROOKS. Yes. Now I would like to know, your Honor, why this is not as competent as anything they have put in? We have objected to their putting in evidence, and you have allowed it again and again, Mr. Chase's tables from the Gas Commissioners' and Electric Light Commissioners' reports. You will find any number of objections made by us. Why should you draw the line now?

Mr. MATTHEWS. Mr. Chase's evidence went in on the ground that our friends relied on the data in the reports.

Mr. BROOKS. Mr. Chase's evidence went in from the Gas Commissioners' reports, and under our objection. It is a curious performance to indulge in now. If this ruling is—it don't make any difference whether it is population or lines of gas main.

Mr. COTTER. How did you obtain that information, Mr. Witness?

The WITNESS. The population I obtained from the State census report.

Mr. MATTHEWS. How did you obtain the figures of valuation?

Mr. BROOKS. Well, let the Commissioner finish his examination.

Mr. MATTHEWS. I thought he did finish.

Mr. COTTER. Where did you find the State census report?

The WITNESS. It was in our office.

Mr. BROOKS. Your Honor refers to Vol. IX., page 137. They have put in the population of all the other towns in the Commonwealth, except Holyoke.

Mr. COTTER. That State census report is within reach of everybody; it is a public document, and the witness's statement can be verified in relation to it. We think he may testify in regard to population.

Mr. MATTHEWS. We desire to except to the figures he has of valuation on a different ground.

Mr. COTTER. We will deal with this question first, of the population.

Mr. BROOKS. Let him answer this question first.

The WITNESS. 5,648.

Q. Now give me the population for 1870, 1875, 1880, 1885, 1890, 1895, and Jan. 1, 1898. A. 1870, 10,733; 1875, 16,260; 1880, 21,915; 1885, 27,895; 1890, 35,637; 1895, 40,322; 1898, 44,982.

Q. Now have you —

Mr. MATTHEWS. Does he say he got his figures for 1898 from the State census report?

Mr. BROOKS. I don't know.

Mr. COTTER. He did state that the figures he had before him were taken from the State census, and the book was in his office. I made the inquiry.

Mr. BROOKS. I thought, perhaps, he might want to say for 1898 —

The WITNESS. The figures for 1898 were taken from the census of the truant officers of Holyoke, called a school census.

Q. Which is a public and recorded document in the city of Holyoke? A. Yes, sir.

Mr. MATTHEWS. I object. That is not a paper like a computation from the State census report. It ought to be produced and proved by proper evidence.

Mr. BROOKS. But Mr. Chase was allowed to testify under our objection; and I appealed to your decision then that he went to the private reports of various gas companies, to the Gas Commissioners, for the figures that he had and to which he testified. If this is not just as competent as that which you admitted under our objection, then I want to go and crawl under the table.

The CHAIRMAN. Haven't you all agreed what the population was in 1898?

Mr. MATTHEWS. I thought we had; but this is a different figure from any we ever heard of before.

Mr. COTTER. If the objection is made, we think the re-

turn of the truant officer is somewhat different from the other ; and we think we must sustain the objection, if it is pressed.

Mr. BROOKS. I would like to have your Honor tell me what difference there is between the record returns of a public officer to the city of Holyoke — a municipal corporation — than the returns of a private gas concern to the Gas Commissioners, which is not a public document.

Mr. COTTER. Don't put us to the inconvenience and trouble of going back to revise our finding — or our decision — some weeks ago.

Mr. BROOKS. Some months ago ; but I am —

The CHAIRMAN. Mr. Chase's evidence was put on an entirely different basis from this.

Mr. MATTHEWS. Chase was called as an expert, and qualified as such ; and he offered a schedule based upon certain data, which is entirely different.

Mr. BROOKS. Your Honor has a much more acute mind than I or my associate. We cannot understand the difference.

The CHAIRMAN. I should like to agree with you, Brother Brooks.

Mr. BROOKS. It was for the same purpose, we contend,— along the same lines,— to obtain the same results which he gave, not as a reason for expressing his opinion, but his opinion.

Mr. COTTER. Dealing with the information, he says he obtained his information from the return made by a certain officer,— a truant officer in Holyoke. We don't think he can testify to that return, if that truant officer is within reach.

Mr. BROOKS. I would like to be heard a little more on Mr. Chase ; your Honors allowed to go in under our objection his estimate of the population of Holyoke in 1898.

The CHAIRMAN. By different data.

Mr. BROOKS. We will —

Mr. MATTHEWS. To save you the trouble, we will admit that Mr. Chase made an estimate of the population for 1898 ; based upon the census returns ; but this witness is asked to state the substance of the return of a truant officer.

Mr. BROOKS. His calculation, his estimate, based upon the census return of three years before.

Mr. COTTER. Whatever way we have ruled on the other question, I don't see how this witness can testify to a return made by the truant officer without making any investigation himself.

Mr. BROOKS. Well, it is a public document. Well, all right; I will take the ruling.

Mr. COTTER. We have not a public document before us.

Mr. BROOKS. Very well. Our friends get in no more records, no more nothing hereafter. Almost everything they put in was immaterial and improperly admitted, if we had objected.

Q. Now, Mr. Sickman, have you tabulated the valuation for these various figures? A. Yes.

Q. From what source did you obtain your valuation figures of the city of Holyoke? A. From the city reports.

Q. Public, printed reports? A. Yes, sir.

Mr. BROOKS. We offer that in testimony —

Mr. MATTHEWS. I object.

Mr. BROOKS. — And appeal to your prior rulings.

Mr. GOULDING. The valuation is a public paper.

Mr. COTTER. Well, if objection is made to that, we think we must sustain the objection. We don't think the gentleman can testify to the assessors' return, the assessors' reports; their returns are not within reach of everybody, the same as the State census.

Mr. BROOKS. Your Honor misapprehends. I am asking him if this appears in the printed documents sent out by the city authorities of Holyoke. It appears in a pamphlet form, just the same as the Gas Commissioners' reports.

Mr. COTTER. Very true, but is that anything the City is required to do?

Mr. BROOKS. I think the City is required to do it.

Mr. COTTER. To send out a printed statement?

Mr. BROOKS. Yes, sir.

Mr. GOULDING. The City is a party to the litigation.

Mr. COTTER. They very often do many things for the convenience of the City and taxpayers that they are not required to do. Does their charter require them to do it? If so, it is a public document.

Mr. BROOKS. I know, but they are a party to this litigation.

Mr. COTTER. I know, but a declaration in their own favor cannot help them in this.

Mr. BROOKS. We say it is a declaration against them, because the population is rapidly increasing.

Mr. COTTER. We don't think that is a statement for you to make.

Mr. GOULDING. Hasn't it been decided that a town report or a document a city prints for the use of its inhabitants is evidence in a court of law to which the town or city has to turn? There is certainly some law upon that subject, and my opinion is that it has been held it is admissible, if printed, or reported voluntarily by the town. It is, we say, admissible, if they do it voluntarily rather than by force.

Mr. COTTER. Now we are not aware that there is any such law; and, if you point it out to us, of course we will follow it.

Mr. GOULDING. I think the digest will show, your Honor, that the subject went before the Court often. I won't undertake to say the decision is in accordance with my contention, but I think it is.

Mr. BROOKS. Well, then, very well; we will call on the assessor.

Mr. COTTER. If they insist on it. I don't know that they will. We don't think this gentleman has any more right than any citizen of Holyoke to state what the valuation is.

The CHAIRMAN. I am rather inclined to sustain Brother Cotter.

Mr. COTTER. I thought you would. I have sustained you before.

Mr. BROOKS. If your Honors had made this ruling some months ago, this case would have been shortened by a great many days.

Mr. COTTER. The question did not arise, and we have learned a great deal since then.

Mr. BROOKS. We say precisely the same question arose.

The CHAIRMAN. It seems to me it is necessary to prove that by bringing the assessors' books.

Mr. BROOKS. Well, we can't bring the assessors' books, I suppose, without the assessors. We will call on them to come down.

Mr. COTTER. Well, the clerk —

Mr. BROOKS. The assessors don't have any clerk, except one of their number.

The CHAIRMAN. All right. Go ahead.

Mr. COTTER. In many places they do have.

Mr. BROOKS. They don't have with us, I think. I am not quite positive.

Mr. COTTER. Nearly every board elects a clerk, if there is no provision made for one.

(Noon recess.)

AFTERNOON SESSION.

Mr. MATTHEWS. I would like, Mr. Chairman, to ask whether it is understood that the privilege reserved to us yesterday to examine the real estate transactions of the Company, and put in any evidence concerning their titles, if we find them to be defective, applies to rights of way.

The CHAIRMAN. Yes.

Mr. MATTHEWS. As well as to the fee in land?

The CHAIRMAN. Certainly.

Mr. MATTHEWS. That is to say, that to us is reserved the right to show whether any of their pipes or wires are put in private streets. Mr. Brooks, do you know how that is, as a matter of fact?

Mr. BROOKS. I do not know, sir.

Mr. MATTHEWS. Are any of the streets through which your pipes and wires are laid, as shown on the two plans you have produced, private streets, or are they all public ways?

Mr. BROOKS. I personally know nothing about it. My understanding is that they are all laid either in public streets or in ways of which the Holyoke Water Power Company own the fee or have the granted right.

Mr. MATTHEWS. Do you know how those streets are divided between those two classes?

Mr. BROOKS. I cannot tell you.

Mr. MATTHEWS. Then we reserve the right to investigate that matter. I suppose the City Hall people know, don't they? The record of the acceptance of public ways is there, isn't it?

Mr. BROOKS. Well, it would not need to be accepted to be a public way, of course.

Mr. MATTHEWS. No.

Mr. BROOKS. A great many of our ways are not accepted streets.

Mr. GOULDING. I suppose we could give you a list of all the private ways in which pipes are laid, and all the places where pipes are laid across private land.

Mr. BROOKS. It would not be competent.

Mr. MATTHEWS. Mr. Brooks, you mean that some of these ways have become public ways by dedication, and not by special action of the City Council?

Mr. BROOKS. Yes, sir, or by prescription.

Mr. MATTHEWS. It might become material. We will reserve the right.

Mr. BROOKS. May it please your Honors, in view of your decision with reference to the admission of evidence of valuation this morning, I should ask your Honors to go to Holyoke tomorrow morning to receive such testimony as we can present from the proper city official.

The CHAIRMAN. If it is simply to get the valuation, why cannot the assessors bring the books here?

Mr. BROOKS. Why, because over this long period, as your Honors see, it would take a great many books.

Mr. COTTER. Can't we take a transcript of the record? You will not object (to counsel for the City) to one of the assessors coming here with a transcript of his record?

Mr. BROOKS. It would not be competent evidence.

Mr. COTTER. No, but, if they do not object —

Mr. BROOKS. And I cannot promise that an assessor will give that to me. I can subpoena the assessor. They are in the employ, of course, of the city of Holyoke.

Mr. COTTER. If you will ask the clerk of your assessors to make a transcript of what the record will show on the question of valuation, the other side will consent to it.

Mr. MATTHEWS. Consent to it, if otherwise competent.

Mr. COTTER. Yes.

Mr. BROOKS. If there is any question about its competency, let us have it now. I don't care to go to any considerable expenditure —

Mr. MATTHEWS. We might as well raise the question of competency when the matter is offered.

Mr. BROOKS. When the proper time comes I shall move, probably, to have Mr. Chase's testimony all stricken from the record.

The CHAIRMAN. We shall not pass on that now, Mr. Brooks.

Mr. BROOKS. No. But we ask your Honors to go to Holyoke to-morrow morning in view of this testimony. I cannot make an assessor make me a transcript.

The CHAIRMAN. I think it is perfectly safe to have an assessor come here with his transcript. We are not called upon to go there, unless it is especially needed.

Mr. BROOKS. I cannot get an assessor to make a transcript.

Mr. MATTHEWS. We can have one, can't we, Mr. Green?

Mr. GREEN. I should not suppose there would be any difficulty.

The CHAIRMAN. All right; will you see that it is procured, Mr. Green?

Mr. GREEN. Yes.

The CHAIRMAN. All right.

Mr. COTTER. The Blue Book of 1895 and 1896, I presume, gives the valuation. It gives the population, I think, for 1895; and the one of 1898, I think, gives the valuation.

Mr. MATTHEWS. I think we can find out what the fact is.

Mr. BROOKS. I have not a series of Blue Books running back to 1865. That is the point here. I cannot produce any Blue Books from 1865.

Mr. MATTHEWS. What period do you want, Mr. Brooks?

Mr. BROOKS. 1865 to 1898.

Mr. MATTHEWS. Each year?

Mr. BROOKS. Yes.

Mr. MATTHEWS. Total valuation?

Mr. BROOKS. Yes.

Mr. MATTHEWS. Real and personal?

Mr. BROOKS. I want the total valuation.

Mr. MATTHEWS. Of what,— real and personal?

Mr. BROOKS. Of everything.

Mr. MATTHEWS. Well, both?

Mr. BROOKS. Well, I don't know as I want the poll valuation, unless it was an electric light pole.

Mr. MATTHEWS. Oh, no.

Mr. GOULDING. That is not worth much, probably.

Mr. MATTHEWS. Valuation for taxes for — What do you want,— 1865?

Mr. BROOKS. To 1898, both inclusive. I want it by tomorrow morning.

Mr. MATTHEWS. We will get it for you.

Mr. BROOKS. Now, Mr. Sickman.

ALBERT F. SICKMAN, *resumed.**Re-direct examination by Mr. BROOKS, continued.*

Q. I show you Exhibit 242, produced by you this morning, which purports to give the number of different days during which there were any restrictions from 1896 to 1899 inclusive, and ask you whether or not, if you had taken a period of eleven years or ten years, the number of fractional restricted days would have been very considerably less? A. It would probably be less.

Q. Well, would probably be considerably less? A. Yes, sir.

Q. That was my question. I had the word "considerably" in it. Have you made a tabulation, Mr. Sickman, showing the area covered by mill buildings and its relation to the water powers used in connection with those buildings in the city of Holyoke? A. Yes, sir.

Q. Is this the tabulation? (Showing paper to witness.) A. Yes, sir.

Q. You have certain characters under the column headed "No." "ox," and "o," and "oxy" and "yx." What is the signification of those characters? A. The character "o" refers to permanent steam power.

Q. What does it mean? You say "refers to it"; what does it mean? A. It means that the mill opposite which this character is placed uses steam power every day, permanent steam power.

Q. For running any particular mechanism?

Mr. MATTHEWS. Wait one moment. How does the witness know about that?

Mr. BROOKS. From his own personal observation.

Mr. MATTHEWS. Well, does he?

Mr. BROOKS. I am assuming that he does. (To witness.) I am asking you now the meaning of these characters. I have a right to put that in.

Mr. COTTER. You understand, Mr. Witness, you are to testify to what you know of your own personal knowledge.

The WITNESS. Yes, sir.

Q. Go on with your explanation of the meaning of the characters. You have explained "o." A. "x" is auxiliary steam power, which is used part of the time, and "y" is steam power which is great enough to run the entire plant.

Q. And whether or not the mills that you have designated there as using steam power permanently use it for a particular purpose, and state, if you can, what that purpose is? A. It is used for running the paper machines.

Mr. BROOKS. Now, gentlemen, I offer this. (Showing table to counsel for the City.)

Mr. MATTHEWS. I would like to ask, Mr. Brooks, if this is part of your rebuttal?

Mr. BROOKS. Well, you may consider it either way.

Mr. MATTHEWS. What?

Mr. BROOKS. It is immaterial to me which you consider it. I don't care what you entitle it.

Mr. MATTHEWS. I would like to know whether you have begun your rebuttal or not. That is the object of my question.

Mr. BROOKS. Do you ask me the question?

Mr. MATTHEWS. Yes.

Mr. BROOKS. No, I say this is competent in re-direct.

Mr. MATTHEWS. That is, Mr. Sickman is still on the witness stand as originally put there by you?

Mr. BROOKS. Yes, and as recalled many times by you.

Mr. MATTHEWS. Yes, I just wanted to understand.

Mr. BROOKS. It should be entitled re-direct.

Mr. MATTHEWS. All right.

(The table produced by the witness was marked "Exhibit 246, F. H. B.")

AREA COVERED BY MILL BUILDINGS — A. F. SICKMAN. 121

[EXHIBIT 246.]

TABLE SHOWING AREA COVERED BY MILL BUILDINGS AND ITS
RELATION TO THE WATER POWERS USED.

No.	NAME.	MILL POWERS.			Mill area square feet.	Area per M. P.
		Perm. and non-perm.	Surplus.	Total water power.		
1	Parsons Paper Co.	12	6.34	18.34	71,948	3,923
4	Lyman Mills	26.5	8.80	35.30	122,817	3,480
5	Whiting Paper Co., No. 2	5.5	5.64	11.14	38,848	3,487
8	Beebe & Holbrook Co.	4.25	5.85	10.10	41,198	4,079
9	Waugrean Paper Co.	5	2.03	7.03	25,136	3,579
11	Massasoit Paper Co.	4	3.27	7.27	22,819	3,139
13	George C. Gill Paper Co.	10	11.03	21.03	67,868	3,227
15	Esleek Paper Co.	5	8.45	13.45	42,094	3,130
16	Albion Paper Co.	12	5.53	17.53	73,806	4,210
17	Crocker Manufacturing Co.	16	2.17	18.17	70,346	3,872
23	Geo. R. Dickinson Paper Co.	15	2.13	17.13	63,816	3,725
32	Chemical Paper Co.	16	11.20	27.20	98,608	3,625
34	Excelsior Paper Co.	2	.93	2.93	13,769	4,699
38	Riverside Paper Co.	13	10.81	23.81	88,946	3,736
40	Carew Manufacturing Co.	2	7.96	9.96	22,165	2,226
41	Hampshire Paper Co.	2	5.02	7.02	20,452	2,913
43	Seymour Cutlery Co.	3½			14,310	4,089
44	Goddard Machine Co.					
45	Horner and Standard Machine Co.					

NOTE.—o Permanent steam power.
x Auxiliary steam power.
y Can run whole plant by steam.

The CHAIRMAN. Let me see the paper you have just put in, Mr. Brooks.

Mr. BROOKS. Certainly.

The CHAIRMAN. I don't know but you were using it.

Mr. BROOKS. No, sir, I had finished. That is put in with the object of showing the amount of land per mill power used by that list of mills, and the amount of water power.

Q. I show you Exhibit 180, put in by Mr. Main, which has the title of "Mills on first level discharging into the second." Look at it. Now what, if any, corrections should be made in that schedule?

Mr. GREEN. I object.

Mr. MATTHEWS. Let me see the schedule, Mr. Brooks. (Examining Exhibit 180.)

Mr. GREEN. I withdraw my objection.

(Question read.)

A. In column 5, opposite "Beebe & Holbrook Co." should appear " $3\frac{1}{4}$ mill powers," — the night mill powers.

Q. All right; go ahead. A. In column 3, opposite the Lyman Mills, should appear "36.13."

By Mr. GREEN.

Q. Should appear what, Mr. Sickman? A. 36.13.

By Mr. BROOKS.

Q. Instead of 33.49? A. Yes, sir.

Mr. MATTHEWS. Mr. Brooks, I did not understand what the correction was to be made in the other item.

Mr. BROOKS. That is, in column 5, opposite the Beebe & Holbrook Mill, there should be $3\frac{1}{4}$ mill power.

Mr. MATTHEWS. Instead of what?

Mr. BROOKS. Instead of zero. No, wait a minute, I guess I am wrong. No, instead of $3\frac{1}{2}$.

Mr. MATTHEWS. $3\frac{1}{4}$ instead of $3\frac{1}{2}$?

Mr. BROOKS. Yes.

By Mr. MATTHEWS.

Q. What is the correction, Mr. Sickman,—the second correction? A. The second correction is on the Lyman Mills, in the third column, which should read 36.13.

Q. Instead of what? A. 33 and a fraction; I have forgotten now.

Mr. GOULDING. Forty-nine one-hundredths.

Mr. BROOKS. Yes.

By Mr. BROOKS.

Q. Well, go on; column 8. A. In column 8, also opposite the Lyman Mills, should be "9.63."

By the CHAIRMAN.

Q. Instead of what? A. Instead of 6 and a fraction.

By Mr. BROOKS.

Q. Well, you mean by that 6.99, meaning what, of what? A. Mill powers, fractions of mill powers. And the footing of column 8 should be 59.69.

Q. Well, that means 59.69 excess of wheel capacity above column 7? A. Yes, sir.

Q. Now what should the correction be in the heading of column 7? A. The words added to that heading are "without surplus."

Mr. GOULDING. Without what?

The WITNESS. Without surplus.

Q. Now how much water is used at the gas works for power? A. A quarter of a mill power.

Q. How much is used for other purposes you— A. I don't know.

Q. —perhaps don't know, at the gas works? A. I don't.

Q. Mr. Green has made certain figures of averages here, on this exhibit numbered 236. Will you see now if those are correct? I presume they are, but I want to be certain.

Mr. GREEN. They are intended to be correct.

Mr. MATTHEWS. You ask him to figure those all out?

Mr. BROOKS. Yes.

The WITNESS. That takes up time.

Q. How long? A. Half an hour.

Mr. BROOKS. Well, you do it, then, at four o'clock, and let me know.

Mr. GREEN. If there is anything that needs to be corrected, you correct it, Mr. Sickman.

Mr. MATTHEWS. Let us know this afternoon, if you can.

The WITNESS. Yes.

Mr. BROOKS. That is all, with that exception.

Re-cross examination by Mr. MATTHEWS.

Q. I show you Exhibit 246, which you have just put in evidence, being entitled "Table showing Area covered by Mill Buildings and its Relation to the Water Power used." I notice that you have about eighteen or twenty mills there, and not the entire mills; is that so? A. Yes, sir.

Q. Did you select those mills on any special principle or for any particular reason? And, if so, what? A. Where the buildings are compact, and not extremely large.

Q. Well, you selected, then, these eighteen or twenty instances out of all the mill sites in Holyoke? A. Yes, sir.

Q. How many are there all together?

Mr. BROOKS. You mean that are built on, I suppose, Mr. Matthews?

Mr. MATTHEWS. Yes, I mean mill sites built on.

A. Oh, I think about fifty.

Q. Are the figures in the column headed mill powers reduced to 24-hour powers or not? Or are they a jumble of day, night, and 24-hour power and 16-hour power? A. They were not all 12-hour powers, and they are not all 24-hour powers; they're some of each.

Q. And some night and some day? A. Yes, sir.

Q. And some 16? A. Yes, sir.

Q. And some 24? A. Yes, sir.

Q. Now, in getting the area, in getting what you call — in getting the figures for the column headed "Mill Area, Square

Feet," you took off, I understand you, the area covered by the buildings alone? A. Yes, sir.

Q. Did you include anything for surrounding land? A. No, sir.

Q. You took no — you took into account no surrounding land for light and air? A. No, sir.

Q. Or for passageways? A. No, sir.

Q. Or for extensions or additions? A. No, sir.

Q. Nothing for yard room? A. No, sir.

Q. Nothing for rights of way? A. No, sir.

Q. Simply land covered by the buildings themselves; that is it, is it? A. Yes, sir.

Q. I see that you have here against the George R. Dickinson Paper Company 15 permanent and non-permanent mill powers. How do you figure that out? A. That is their night power.

Q. What? A. They have 15 permanent and non-permanent mill powers at night.

Q. Well, in the schedule that was submitted, prepared by you and put in through Mr. Gross, opposite page 68 of Vol. IX., we find —

Mr. BROOKS. Let us see that, Vol. IX., page 68.

Mr. MATTHEWS. I see 9 mill power, 9 night power, and 6 16-hour power, non-permanent, and this 24 hours, — how do you get 15 out of those figures? A. 9 night powers and 6 24-hour powers, which are — which is included, of course, in the night. During the night hours they have a right to 15 mill powers.

Q. Then what do you do with the 6 16-hour powers; leave that out? A. No; that is, that don't appear.

Q. Those are the day powers? A. The 6 day powers don't appear.

Mr. BROOKS. Don't appear where? you don't mean they don't appear. You mean they don't appear opposite page 68?

Mr. MATTHEWS. No, they don't appear as he has figured in Exhibit 246.

Mr. BROOKS. I understand. I was going to clear that up in a minute.

Q. What do the numbers mean in the first column? You have described to Mr. Brooks the letters, what they mean; but what do the Arabic numerals in that column mean? A. They refer to the schedule of mill sites that have been put in.

Q. Which one,—the one I have just been referring to? A. I think that is the one put in by Mr. Brooks.

Q. Where each mill site is given a number? A. The same as appears on the map.

Q. Now did you measure these mills yourself? A. No, sir.

Q. How did you get the area covered by the buildings? A. They were made from plans.

Q. What plans? A. Partly from plans we have and partly from insurance maps.

Q. Insurance maps? A. Yes, sir.

Q. What do you mean by that? A. Maps that we obtained from the insurance agents, which show the different parcels in which they hold insurance.

Q. Why didn't you use the map you prepared yourself, showing the buildings on the mill sites, which is printed in Vol. VIII., opposite page 308? A. The scale was so small it would be hard to use that.

Q. Well, did you try to figure out from this map, wherein the buildings are colored red, opposite page 308 of Vol. VIII., what was the relative area of buildings covered,—covered by the buildings to mill power? A. No, sir, I did not.

Q. You didn't try to do it? A. No, sir.

Q. Did you take some maps that you had in your own office, and also some maps furnished you by the insurance people,—is that it? A. Yes, sir.

Q. You said there was high water some time on the third level canal. That is what has been called back water, isn't it? A. High water in the river.

Q. High water in the river? How often does that occur? A. Why, quite frequently; whenever there is a rise in the river, there is high water in the river behind the third level.

Q. How often would it average? A. I don't think I can answer.

Q. Have you any records to show? A. We have the records to show the height of the river from day to day during the entire year.

Q. Have you any records to show to what extent the mills on the third level canal are interfered with on the river? A. We have the daily gauge of the mills there, taken for the purpose of measuring the water.

Q. That backing up of the water from the river does not interfere entirely with the running of the mills, does it? A. It does sometimes. The head becomes so small that they are obliged to shut down their wheels.

Q. Do you know how often that happens in the course of a year, that the back water is sufficiently high to cause a stoppage of the mills, at least, of the water wheels?

Mr. BROOKS. Do you mean for how long?

Mr. MATTHEWS. No, how many times in the year, and for how long, too.

A. Well, probably 15 to 18 days in the year, in which their power is very seriously interfered with.

Mr. BROOKS. By back water?

The WITNESS. By back water.

Q. How many days in the year would the power be cut off from that cause? A. I couldn't answer that exactly, because sometimes they crawl along and do a small part of their work, although they don't shut down entirely; but they accomplish very little.

Q. How many of those 15 or 18 days would you say the mills lost the use of the water entirely?

Mr. BROOKS. Times.

Mr. MATTHEWS. Days, I said.

Q. What did you say, fifteen or eighteen days? A. It would be immaterial in this case whether that was days or times. It would be the same.

Q. How many of those fifteen or eighteen times would the mill be unable to run their wheels at all? A. Oh, from five to ten.

Q. And during the rest of the time, the rest of the fifteen or eighteen days, the head would be reduced? A. Yes, sir.

Q. That affects, of course, the calculation of the mill power?
A. Yes, sir.

Q. But not the price that they paid; that is to say, the mills pay so much a mill power, which is figured according to the head of the water as it happens to be? A. Yes, sir.

Mr. MATTHEWS. I don't think of anything further.

Re-direct examination by Mr. BROOKS.

Q. One question. What mills are there on the second level canal which discharge into the river? A. Do you wish me to name them?

Q. Yes. A. The Hadley Company, the Valley Paper Company, the Crocker Manufacturing Company, the Albion Paper Company, the Esleeck Paper Company, the Nonotuck Paper Company, and George C. Gill Paper Company.

Q. Yes, and what is the effect of high water in the river upon these—the running of these mills by water power, that are situated upon the second level, and which you have just enumerated? A. They are affected by high water, although not so seriously as the third level mills.

Q. That is, you mean they are affected in the same way, the drowning of their wheels? A. Yes, sir, in the same manner, but not to such an extent.

Re-cross examination by Mr. MATTHEWS.

Q. Well, now, take the second level canal mills discharging into the river: how many days would they be affected by the back water from the river in comparison with the fifteen or eighteen days upon which the third level canal mills would be affected? A. Not so many.

Q. Well, half as many or quarter as many? A. Probably half.

Q. Now make the comparison between the five to ten days which you have said—during which you have said the third level canal mills would be stopped entirely from back water, and

apply that to the mills on the second level canal discharging into the river: how many days would they be stopped by back water? A. I think they would not be stopped any days by back water.

Q. They would be affected, perhaps, half as often as the third level canal mills discharging into the river, but not in any case so as to be obliged to stop? A. No, sir.

Q. What is the head of the second level canal discharging into the river? A. It depends upon the state of the river, of course. It varies in low water there; in times of low water in the river, the head varies from twenty feet at the Hadley Company to thirty or thirty-one at the George C. Gill.

The CHAIRMAN. That is, from one extreme of the canal to the other?

The WITNESS. Yes.

Q. Those all discharge into the river? A. Yes, sir.

Q. How does the head on the third level canal vary, within what limits? A. In the same way. The head on the third level canal is about 22 to 23 or 24.

Mr. MATTHEWS. That is all.

Re-direct examination by Mr. BROOKS.

Q. You say that the mills upon the second level which discharge into the river are not affected to the same extent as the mills upon the third level discharging into the river by the drowning of the wheels by back water? A. They are not affected to the same extent.

Q. Now whether or not they are affected, and whether or not they in times of high water, when there is back water upon their wheels, obtain the efficiency of their wheels? A. They don't obtain the full efficiency of their wheels.

Q. Or capacity? A. It is not so often that the capacity is affected.

Q. Well, is the capacity affected whenever there is back water? A. Slightly.

Q. I mean on the second level? A. Yes, sir.

Q. That discharge into the river. Now the mills that discharge into the river have wheel plants which compare in size how with the other mills that don't discharge into the river? A. The wheel plants are larger.

Q. And why are they larger? A. To provide against times of back water.

Q. Yes. In this tabulation, which is marked "Exhibit 246," whether in obtaining the mill powers as applied to any particular area you had the night and the day mill powers together, or whether you take the mill powers used by the mill at any one time? A. I have taken the mill powers used by the mills at one time.

Q. Now will you look at this schedule, which is in Vol. IX., opposite page 68, and tell me whether or not the George R. Dickinson Paper Company could use 21 mill powers at one time, for instance, in the night? A. There is nothing in this schedule to show how much they might use.

Q. Well, how much are they under — how much can they use at any one time in the night? A. Under their indentures, they can use 15 mill powers.

Q. Can they use 21? A. It would be surplus then.

Q. What is the capacity of the wheels? A. That is in Mr. Main's schedule. (Consulting paper given to him by Mr. Brooks.) The capacity of the George R. Dickinson Paper Company's wheels is 21.63 mill powers.

Q. Six 16 and six 24, the same mill powers? A. They are not the same mill powers.

Q. Now have you 9 night permanent powers for the George R. Dickinson, six 16-hour powers and six 24-hour powers? A. Yes, sir.

Q. Now I want to ask you, taking that into consideration, how much they can use at any one time during the night with those wheels? A. Their night power is 8-hour power.

Q. Yes, it is 9 night permanent power? A. Yes, sir, 8 hours.

Mr. GREEN. That doesn't run when the 16-hour runs, does it?

The WITNESS. No, sir.

Mr. BROOKS. Well, that is all I care to inquire.

Mr. MATTHEWS. That is all.

Mr. GREEN. This Mackintosh exhibit, which was marked "F, S. M. S.," which relates to the surplus power whereby the D. Mackintosh Sons & Co.,—we would like to offer that in evidence now in connection with the testimony which has been introduced in regard to it.

The CHAIRMAN. What do you say, Mr. Brooks?

Mr. BROOKS. Well, I would like to see that a minute.

Mr. GREEN. We understand that it was referred to this morning in the testimony of Mr. Sickman.

Mr. BROOKS. I do not so understand it. I would like to have you tell me what testimony he gave that refers to that.

Mr. MATTHEWS. We have all been talking about the Mackintosh.

Mr. BROOKS. With reference to the subsidiary agreement; it was not in reference to any surplus water. I have put in no testimony that makes this competent.

The CHAIRMAN. You better wait and see the evidence.

Mr. MATTHEWS. Very well; we will leave that. That, Mr. Chairman, is our case.

The CHAIRMAN. All right. Mr. Brooks, go ahead.

Mr. MATTHEWS. Subject to the matter that is to come in later.

The CHAIRMAN. Yes.

TESTIMONY FOR THE PETITIONER IN REBUTTAL.

WILLIAM H. FOSTER, *recalled.*

Direct examination by Mr. BROOKS.

Q. Mr. Foster, I notice in Vol. II., page 215, that the question is raised as to your qualifications to apportion between expense and capital, as Mr. Matthews puts it. I want to inquire a little more into your experience with reference to the examination of the books of gas and electric light companies. Now will you be kind enough to tell the Commission how many gas and electric light companies' books you have examined in the past decade?

Mr. MATTHEWS. We object.

Mr. COTTER. Why do you offer it at this time, Mr. Brooks?

Mr. BROOKS. Because we didn't go into a long catalogue of his qualifications, and, lest there may be a question raised hereafter, we desire to put it in now. We propose to ask some questions with reference to Mr. Chase's testimony.

Mr. COTTER. We allowed him to testify.

Mr. BROOKS. Of course, if the hard and fast rule is going to be applied to us —

Mr. COTTER. Can you say it is something you have overlooked?

Mr. BROOKS. I can say that I didn't think it was necessary at the time to put in the record a catalogue of his qualifications in this line. It seems to me, in view of reading this testimony, it may be of some consequence to the Commission to know the qualifications of Mr. Foster, and his capacity to give the testimony. And we say furthermore, may it please your Honors, in view of Mr. Chase's testimony, we have got the right

to qualify him for the purpose of criticising Mr. Chase's testimony, it seems to me, for that purpose.

Mr. COTTER. You don't expect to recall any considerable number of your experts, and qualify them again, do you?

Mr. GOULDING. May it please your Honors, my friend Brooks has twice or three times called the Commission's attention to the fact that we propose to qualify this witness with a view of a criticism of Mr. Chase's testimony. Now it is conceivable, at least, that we have the right to qualify him anew for that purpose. And we have a right to call as many experts as we have a mind to, within ordinary limits of the trial of the case, and qualify them anew with reference to that new evidence which has been made important by the introduction of the testimony of Mr. Chase.

The CHAIRMAN. This witness was qualified as an accountant originally.

Mr. GOULDING. Suppose he was qualified as an accountant originally, and suppose Mr. Chase offered testimony here in regard to the whole or a large part of the depreciation, or any other thing, and we propose to criticise that evidence, by evidence in contradiction, and call an expert, and his name happens to be William H. Foster, the same man we called before, we have a right to qualify him with respect to the new duties we expect of him, the same as a new witness.

Mr. BROOKS. So far as Mr. Chase's testimony is concerned, we say he stands in the light of a new witness.

Mr. COTTER. We think it is a matter of discretion. We don't think we ought to be called upon to exercise that discretion with a great many witnesses on a subject which was testified to in chief; but, in this case, we will let the witness testify.

Mr. MATTHEWS. I understand that applies to the qualifications of this witness?

Mr. COTTER. Yes.

Mr. BROOKS. Now will you repeat my question?

(Question read by stenographer.)

A. I cannot tell offhand, but I should say something over thirty.

Q. For what purpose was the examination made? A. For the purpose, primarily, of distinguishing between capital and expense,—not capitalizing expenses that should be borne by the operating branch of the business.

By Mr. MATTHEWS.

Q. Mr. Foster, did you say gas and electric light companies?

A. Gas and electric light.

By Mr. BROOKS.

Q. Now how many gas companies' books and how many electric light companies' books have you made an examination of for this purpose,—about how many? A. A dozen gas companies, I should say.

Q. And as many or more electric light companies? A. Eight electric light companies.

Q. That makes twenty? A. Yes.

Q. I understood you to say thirty. A. Well, there are a great many I haven't mentioned at all, on account of negotiations pending.

Q. That is, in addition to the twenty, there are many you do not mention because of the pending negotiations? A. Yes, sir.

Q. Give us a list of some of the gas and electric light companies in the past eight or ten years that you have made an examination of, with reference to the particular subject that you have already said was the object of the investigation? A. Elmira, N.Y., there were two, one gas and one electric. Do you wish the names?

Q. Well, yes, give the names, if you can give them. A. Some I can, and some I cannot.

Q. Give us the names of the towns. A. Syracuse, N.Y., two,—one gas and one electric. Buffalo, three,—all gas. New York City, two.

Q. Gas or electric? A. Two, electric. Brooklyn, one, gas. Newark, N.J., one, gas. Trenton —

Q. Newark, N.J., one gas,—and any electrics? A. No. I put that in. Brooklyn comes in there. Trenton, N.J., two gas companies. Washington —

By the CHAIRMAN.

Q. Are you reading from your original testimony, Mr. Foster? A. No, sir.

Mr. BROOKS. He is reading from a list he has. We shouldn't seek to put in any testimony already in.

The CHAIRMAN. I didn't suppose you would, Mr. Brooks.

By Mr. BROOKS.

Q. Go on, Mr. Foster. A. Trenton, N.J., two, both gas. Washington, D.C., one, gas. South Bend, Ind., one electric company. Covington, Ky., one electric company. Norfolk, Va., one electric and one gas. Wilmington, N.C., one gas. Denver, Col., one gas.

Q. Was there anything in Camden, N.J.? A. Yes, I examined the gas company in Camden.

Q. Was there any way of obtaining the cost of the laying of the mains of the gas department of the Holyoke Water Power Company from the books or records of the Company? A. There was not, no, sir.

Q. Why?

Mr. MATTHEWS. We object. We say it has all been gone into before.

Mr. BROOKS. I say it has not. If it has, I don't remember it.

The CHAIRMAN. If it is a matter of forgetfulness.

Mr. BROOKS. It isn't a matter of forgetfulness. I contend it wasn't gone into before.

Mr. MATTHEWS. If it wasn't, why shouldn't it have been? Why put it in in rebuttal?

Mr. BROOKS. Because some of your witnesses have endeavored to state what the cost was of these mains, and you, in one of your numerous speeches, gave a very strong criticism on Mr. Randolph.

Mr. GREEN. I don't understand that we have introduced any evidence other than of the same nature as that introduced by the petitioner originally, the same as Mr. Prichard put in, what the cost was.

Mr. BROOKS. No evidence of actual cost. You knew nothing about it.

Mr. COTTER. The question here, it seems to me, it is going back to the original testimony of this gentleman.

Mr. BROOKS. Mr. Matthews stood up, in one of his numerous very well conceived speeches, and stated to your Honors that Mr. Randolph was to be most vigorously criticised, because he didn't state to your Honors what the cost of these mains were in Holyoke. Now, in view of that, we purpose to show that there was no way of obtaining the cost from the books of the Holyoke Water Power Company, if we may be permitted.

Mr. MATTHEWS. When was that statement made by me?

Mr. BROOKS. I can't tell you the date.

Mr. MATTHEWS. I have no recollection of saying anything of that sort about Mr. Randolph. I remember criticising his line of testimony, but that was Mr. Brooks's first expert, and he had a right to recall him before he closed his case.

Mr. BROOKS. But Mr. Foster had testified when Mr. Randolph was a witness in this case.

Mr. MATTHEWS. That would have entitled you to recall Mr. Foster in your case in chief.

Mr. BROOKS. I haven't always been able to recall Mr. Foster.

The CHAIRMAN. In rebuttal, the testimony, — this is an illustration. A question that could be thoroughly answered without special investigation, if it had been raised in the case, ought to have been put in. But Mr. Brooks is simply asking if a thing couldn't be found from the books. The question may be answered. I think it is proper in rebuttal.

(Question read by stenographer.)

A. Simply for the reason that the Company didn't keep a general stores account, and didn't have the means of specifying the material used on any given piece of work. Besides that, the pay roll was not so subdivided as to keep separate the labor charges for repair work or new work or renewals of mains or services.

Q. Mr. Foster, whether or not depreciation is a question of

accounting or book-keeping, or largely a question of accounting or book-keeping?

Mr. MATTHEWS. We object to that.

Mr. BROOKS. All right.

Mr. MATTHEWS. Our objection to that question and to any other question in that line is that all these matters of depreciation were gone into by the witnesses for the Company in their examination in chief. So far as depreciation as bearing upon the value, upon earning value, or as bearing upon structural value, is an issue in this case, it was proper to be gone into by the attorneys for the Company in putting in their case in chief, and it was gone into. Every expert for the Company testified on the subject of depreciation. Mr. Randolph, Mr. Humphreys, Mr. Prichard, Mr. Nettleton, Mr. Fowler, Mr. Sherman, — every one of them talked about depreciation. And the same is true of all the electric light experts that were put on the witness stand by my brother, in putting in his case in chief. We contend that it is not open to him to retry his case upon depreciation, or upon any other important part of it, in rebuttal.

Mr. BROOKS. We say we put in evidence, may it please your Honors, of actual depreciation. They have claimed, through Mr. Chase, that depreciation in substance is a matter of book-keeping. And Mr. Matthews, during Mr. Chase's testimony, in Vol. IX., on page 14, says substantially the same thing. I will read what he says.

Mr. MATTHEWS. I say that depreciation in a plant is a matter of book-keeping, do I, Mr. Brooks?

Mr. BROOKS. I will find it for you in a minute.

The CHAIRMAN. I understand that on this question of depreciation the petitioner has a certain theory, and on the question of depreciation the respondent has other theories, and opens new doors on the question of depreciation.

Mr. MATTHEWS. You are right about the different theories, your Honor.

The CHAIRMAN. I remember Mr. Chase was quite elaborate in his definition. He ran counter to Mr. Humphreys in his theory. I don't see why they shouldn't meet this.

Mr. MATTHEWS. If the plaintiff tries his case on one theory, and the defendant tries his case on a different theory, can the plaintiff, in rebuttal, try his case all over again on the defendant's theory?

Mr. BROOKS. No, but we can criticise your theory.

Mr. MATTHEWS. This is important, and I think the rule is this: if any new fact or theory is brought out, it can be criticised in rebuttal, but not to the extent of introducing a whole line of evidence upon that theory. Whatever any one particular witness says that is new can be criticised, perhaps, but that is the extent of the rule for the admission of evidence in rebuttal. The plaintiff cannot take advantage of that privilege to retry his whole case on an important part of it or on any part of it by doing in rebuttal what he might have done in the first instance. He cannot try his case on rebuttal upon a second or alternative theory. That applies to a great many other questions in this case as well as to the question of depreciation. If there is any particular thing that our witnesses said that has not been anticipated by the witnesses for the Company, it seems to me that the witnesses for the Company in rebuttal can reply to that particular thing; but I don't think they ought to be permitted to try their case over on a new theory of depreciation. The whole question of depreciation was gone into with all thoroughness, both by my brother and myself, in the examination of the witnesses for the Company. Their theories were fully developed, I thought,—their sinking fund theory and the other theories; and the amounts which they said were proper to be charged for depreciation were testified to. Then we put in evidence, through Mr. Chase and others, that other amounts ought to be charged for depreciation,—different and larger amounts. Mr. Chase and our other witnesses fortified their theories in various ways, or endeavored to; and can this witness do any more than simply criticise the new facts that were brought out by Mr. Chase and others for the respondents?

The CHAIRMAN. No.

Mr. MATTHEWS. It seems to me that my brother is

opening up an entirely new line of independent theorization on depreciation which he might have put in at the outset.

Mr. BROOKS. I say, may it please your Honors, that we did try our case on one theory; that was of actual depreciation. They have chosen to try their case on another theory, of book-keeping depreciation. And we have a right to criticise that theory, and we have a right to show wherein it is wrong; and it is for the information of the Commission, and it is our duty, for their information, that we should show it. And I want to call attention to the testimony of Mr. Chase, and what Mr. Matthews says on page 14 of Vol. IX. Mr. Matthews says:—

“This question of depreciation is largely a question of accounting, of book-keeping.” (Page 14, near the bottom.)

Now I say the question that is now pending is whether or not it is. Mr. Chase said substantially the same thing, and he exploited his theories for almost an entire volume.

Mr. COTTER. Did Mr. Chase assent to that proposition?

Mr. BROOKS. Oh, certainly; all his tables, if it please your Honor, are based upon that, every one of them.

Mr. MATTHEWS. We do not assent to that proposition.

The CHAIRMAN. I understand the rule to be,—and I would like to have Brother Cotter state it if it is not his idea, too; I have not consulted with him. The plaintiff goes forward. The defence has practically but one chance. His chance should be equal to that of the plaintiff. Now the defendant puts in facts and theories to meet the plaintiff's case. The plaintiff has a right to come back at him on those new facts and new theories. He cannot retry his case.

Mr. BROOKS. No, and we do not ask to. We do not seek to retry our case.

The CHAIRMAN. This question, we think, is admissible. We shall not go into reasons on every ruling on all these matters; there will be a great many. We will reserve your rights.

Q. Is it possible to ascertain from the books of the Company the amount of depreciation that should be written off from time to time? A. It is not.

Q. And whether or not the matter of depreciation is a question of accounting or of book-keeping? A. Not solely.

Q. Why not? A. For the simple reason that the matter of depreciation has got to be determined by the combination of the knowledge of a competent engineer, who should examine each plant in question; and his knowledge, derived from said examination, in conjunction with that which the accountant should get from the books relative to the amounts that have been expended for repairs and construction, should both be considered together before any actual amount of depreciation could be arrived at. One could not do it independently of the other without getting the knowledge that the other should possess. Then there is another element that does not appear on the books of the Company, which is very often taken into consideration by the engineers, and that is the appreciation in the values of certain assets of the Company; appreciation in real estate —

Q. The appreciation? A. The appreciation in real estate or of securities, and improvement in local conditions for an increased business. They all enter into the engineers' estimate for a depreciation or what the depreciation should be.

Q. Take up Mr. Chase's Table 11, if you please, A, B, and C, Vol. IX. pages 146 and 147. Does the column headed "Manufacturing Profit" contain the profit shown in the report of the Gas Commissioners? A. It does not.

Q. Have you examined these various reports in connection with the various tables of Mr. Chase? A. I have examined some of them, yes, sir.

Q. And for a series of years? A. Yes, sir.

Q. Now there is a column headed "Depreciation Charges." A. Yes, sir.

Q. Does that contain items other than depreciation items? A. It certainly does.

Q. Even from the Gas Commissioners' report? A. It certainly does.

Q. Now have you prepared a tabulation which shows the differences in detail? A. I have.

Q. Will you produce it? (Papers produced by witness.)

Mr. BROOKS. I am going to hand up a bundle of these. (Giving papers to the Commissioners.) If any are excluded of the number, I purpose to have those all marked in the tables.

Mr. MATTHEWS. Have you a copy for us?

Mr. BROOKS. Yes, I will give you one. The tables prepared by Mr. Foster, so far as he has prepared any in criticism of Mr. Chase, bear the same numbering as the tabulations of Mr. Chase. Can we turn this over to our friends?

Mr. MATTHEWS. Have you two for us, Brother Brooks?

Mr. BROOKS. No, sir.

The CHAIRMAN. These tables are a criticism of Mr. Chase's tables?

Mr. BROOKS. Yes, sir, taken upon the same theory that Mr. Chase prepared his tables.

The CHAIRMAN. All right.

Q. These tables are all made upon the same theories, are they not, upon which Mr. Chase prepared his tables? A. Yes, sir.

Q. And you have gone no farther than the Gas Commissioners' reports? A. No, sir.

Q. And in many instances you have not gone to the Gas Commissioners' reports, but have taken Mr. Chase's figures as a true statement of what the Gas Commissioners' reports might show? A. Well, where it was not possible for me to get the data that he used. In some instances he went to the Gas Commissioners' office and got the returns of the companies; I did not.

Q. That is, where he went to the Gas Commissioners' office and examined the private returns of the gas and electric companies that he says he examined, you did not get a sight of those? A. Oh, no.

Q. And so you took his figures? A. I assumed them to be correct.

Mr. MATTHEWS. Mr. Brooks, you said private returns. Do you mean in the sense that they are not public?

Mr. BROOKS. Well, in the sense that the Commissioners won't let you see them.

Mr. MATTHEWS. That rule has been changed.

Mr. BROOKS. It has been changed within a week, then.

Mr. MATTHEWS. It was changed last year some time.

Mr. BROOKS. No. We have sought to see the reports of gas and electric companies to the Gas Commissioners, and within two weeks it has been refused to us.

Mr. MATTHEWS. I do not want to contradict you,—it is immaterial, perhaps,—but I made the very statement that you made before a committee of the legislature two weeks ago in Mr. Barker's presence, and said that was one of the things that ought to be corrected. Mr. Barker interrupted me, and said that the practice had been discontinued last year.

Mr. BROOKS. I want to say that the practice has not been discontinued, because we endeavored to see them; and we suggested that Mr. Chase had evidently seen them, and were refused permission to see them, not by Mr. Barker,—by whoever was in the office, a clerk, I think.

Mr. MATTHEWS. That may be. Mr. Brooks, you are offering Table 1, a recast of Mr. Chase's Table 11?

Mr. BROOKS. Yes.

The WITNESS. You will find that on the second large sheet, the one you are talking about, Table 11, parts A, B, and C.

Q. Mr. Foster, according to the Gas Commissioners' reports, in the companies embraced in Statement A of Table 11 of Mr. Chase, what was the manufacturing profit? A. \$727,806.74.

Mr. MATTHEWS. What were Mr. Chase's figures, Mr. Brooks, so that we may compare them?

Mr. BROOKS. I am going to have him tell.

Q. As against what of Mr. Chase's? A. 726,233.

Q. Dollars? A. Dollars.

Mr. MATTHEWS. 727 against 726.

Mr. BROOKS. Let me run along with this.

Q. And what do you find the depreciation to be, according to the Gas Commissioners' report, pursuing the theory of Mr. Chase? A. \$198,190.39.

Q. Is that 198 or 196? A. 198,000.

Q. \$198,190.39? A. Yes.

Q. As against what depreciation of Mr. Chase's corresponding table? A. \$220,642.

Q. And how do you arrive at these differences? A. By simply taking depreciation items, and not including other items that have no bearing on depreciation at all, and cannot be considered as depreciation.

Q. These figures are derived by you from the Gas Commissioners' reports? A. Absolutely, yes, sir.

Q. And four of these fifteen companies embraced in Table A have no depreciation, have they, by the report of the Gas Commissioners? A. Four have none at all, no, sir.

By Mr. GOULDING.

Q. Four of the fifteen? A. Four of the fifteen.

By Mr. BROOKS.

Q. How is the manufacturing profit affected by your tabulation of A, Table 11? A. There is only a slight difference. It only increases the manufacturing profit \$1,503.74.

Q. And the depreciation is decreased? A. The decrease in depreciation is \$22,451.61.

Q. And what is the final effect of the correction of those errors of Mr. Chase, in his Table 11, A? A. Well, of course, it would naturally tend to change the divisible income, including interest charges, and also the per cent. of income from sales, as well as cents per thousand feet sold.

Q. And how much does it increase the per cent. of divisible income from sales? A. It increases it from 27.8 to 30.2 per cent.

Q. Will you be kind enough to explain to the Commission how this is accounted for, this increase, on Mr. Chase's theory, of the income from sales over what he has tabulated in his Table 11, A? A. Well, Mr. Chase has eliminated all those amounts stated in the Gas Commissioners' report as income from other sources, but due to manufacturing account. The Commissioners, in their report, very distinctly state and sub-

divide the income from other sources, part of which are directly applicable to manufacturing account, and are so stated in their returns, and other income, from other sources, which has nothing to do with the manufacturing account at all,—nothing to do with manufacture. They specify that fully in their return.

Mr. MATTHEWS. This is the difference of \$1,500, is it?

Mr. BROOKS. More difference than that, if you will look and see.

Mr. GOULDING. \$1,500 in the manufacture —

Q. And the difference in depreciation, how do you arrive at that? A. Well, the depreciation includes all sorts of things that have no business to be included in that item.

Q. Why not? A. Because we have no means of knowing that they are depreciation. The Commissioners' reports don't state that they are.

Q. That is, you have taken the Commissioners' reports as they are? A. To mean what they say.

Q. To mean what they state them? A. Yes.

Q. Then the divisible income, as you discover it, from the Gas Commissioners' report, instead of being 33 cents per thousand of gas sold, according to Mr. Chase in his table 11, A, is what? A. 35.8 cents.

Q. You say that Mr. Chase has excluded income from other sources? A. Yes, sir.

Q. You have included it? A. In arriving at the divisible income.

Q. In arriving at the divisible income. Wholly or partially? A. Wholly.

Q. Yes.

The CHAIRMAN. Included what?

Mr. BROOKS. The income from other sources.

Q. Now, for instance, what income from other sources? A. Well, both classes of income from other sources,—those that pertain to the manufacturing department and those that do not. Those that pertain to the manufacturing department are generally of such character as the following: certain items, such

as coal, for instance, bought and charged to operating expense. Very frequently a company sells to its employees, and that is credited as income from other sources, so as not to unduly swell the expense, the material not being used in the operation. Then, again, there is income from other sources which is not due to the manufacturing department, such as the income from property, house rentals, income from securities that they may own. Of course, that, while an income of the company, has nothing whatever to do with the manufacturing department. In stating my divisible income, I have taken all earnings and all expenses up to interest charges. All such income as that Mr. Chase excludes in his tabulations in stating his divisible net income, but it is —

Q. Take up the Table 11, on page 146, Vol. IX., of Mr. Chase's testimony. What have you done with reference to that? A. I have treated that in the same manner.

Q. Well, now, just explain to the Commission fully what you have done, what your method has been and what results you have attained. A. The Commissioners' reports show the manufacturing profit for these companies to be \$481,735.52 and the depreciation charges to be \$144,614.32. Mr. Chase states his manufacturing profit to be \$477,644 and depreciation charges to be \$154,587.60. This would increase the manufacturing profits of the companies, as shown by Mr. Chase, \$4,091.52 and would decrease the depreciation charges \$9,972.68.

Q. Yes. A. The reason for the differences shown is the same as explained for Table A.

Q. I beg pardon? A. The same reason existed for making the charges as explained for Table A.

Q. Then what becomes the final effect upon Mr. Chase's figures, upon his own theory, and with the Gas Commissioners' reports as a basis? A. Well, Mr. Chase states his divisible income to be \$323,057. The divisible income, I say, should be \$374,172.71.

Q. And Mr.—what does Mr. Chase have per cent. of income of sales for divisible income? A. 25.8 per cent.; according to the way I have recast the table, 29.8 per cent.

Q. Now I see you have on this Table 11 A, and B, certain

entries in the last wide column. Will you explain and read those to the Commission? A. The first one is in regard to the Malden.

Q. The Malden, yes. That is in Table A — A. Of Table A.

Mr. MATTHEWS. Section 11, call it.

Mr. BROOKS. I don't know. Call it A, Table 11,—yes, section 11.

A. The Malden Company in that year, in the year ending June, 1898, charged off, although they called it depreciation, \$15,073.75. I have included it in depreciation, because the Gas Commissioners stated it to be depreciation. I have no reason to believe that it is, and I don't think it is myself, for the simple reason —

The CHAIRMAN. I don't suppose you can give your reason.

Mr. BROOKS. That is the same line of reasoning, may it please your Honor, that Mr. Chase went into.

Mr. MATTHEWS. I don't object.

The CHAIRMAN. All right; go ahead.

The WITNESS. I think for the reason it would muddle the whole matter up in the Commissioners' reports, the majority of this amount, something over \$12,000, was derived way back in 1888.

Q. How? You say amounts derived in — A. Over \$12,000 of this \$15,000.

Q. From what source? A. Was derived from the issuing of new stock by the Company way back in 1888. It was then credited to what they called a "premium account."

Q. Yes. A. And then in this year in question the "premium account" was simply closed, and the amount was charged off as depreciation. It was carried as a credit in the "premium account" until this year, when it was charged off under the head of depreciation,—carried until the preceding year, I believe, 1897, when there was about \$2,000 added; and then in this year it was all wiped out, and called depreciation.

The CHAIRMAN. You mean in 1898 wiped out?

The WITNESS. Yes, but it was really an accumulation from way back in 1888.

Q. Now, Mr. Foster, in arriving at your conclusions you have put that in as depreciation because the Commissioners' report put it in as depreciation? A. Simply because the Commissioners' reports state it as depreciation.

Q. Now explain the rest of these. A. Well, there is included in Mr. Chase's tables \$20,697.51 as depreciation, while on the Gas Commissioners' report it is stated as "extension reserve." There is no reason why that should be considered under depreciation, because we don't know anything about it, have no means of knowing anything about it. The Commissioners have said it should be "extension reserve." Now what was the next item in that wide column? A. The next amount is \$1,758.35. That was in the Commissioners' reports as "construction charged off." There is no reason why that should be considered as depreciation.

Q. And was that included by Mr. Chase in his tabulation, his corresponding tabulation, as depreciation? A. Yes, sir. That item could mean a good many different things. It might mean simply that, as is the custom in a good many companies,—this Company is a good example of it—

Q. You mean the Holyoke Water Power Company? A. Yes. Sometimes a company will charge up certain amounts to construction, properly chargeable to construction; at the end of the year, if they have a very good business, they will simply arbitrarily charge off a certain amount of it, in order to bring down the balance of the construction account. There is no reason at all why that item should be classed as depreciation in this particular instance, as the conditions under which this was done were not known; but, in taking the Gas Commissioners' reports, it certainly cannot be considered as depreciation, and I do not so consider it.

Mr. MATTHEWS. What do you call this item?

Mr. BROOKS. "Construction charged off" in the Gas Commissioners' report.

Q. Now take the corresponding column in table—in section

B of table 11. Will you explain those entries in that column?

A. The statement for Haverhill I have included the amount of \$5,000, which was charged for depreciation fund; that is, I have simply put that on the right side.

Q. You have included that in depreciation? A. I have included that in depreciation.

Q. Is there any reason why that should be included in depreciation? A. Well, it is a mere toss-up. You can make just as good a guess at it as I can. It would be purely a guess, one way or the other. The next one is —

Q. Well, according to the Gas Commissioners' report, that was a fund? A. That was a fund, yes. I have included it as depreciation.

Q. Well, very well. Take the next one. A. The next one is Malden, \$2,580 charged to depreciation.

Q. By Mr. Chase? A. By Mr. Chase. That was the expense of refunding bonds.

Q. Is there any reason why that should go in as depreciation of the Malden plant? A. I certainly don't know of any.

Q. Take the next one. A. Salem. In Salem there is a "reserve fund," — debit and credit, the balance of which was included in Mr. Chase's tables as depreciation. There is no reason why the "reserve fund" should be classed as depreciation.

Q. What was it in the Commissioners' reports? A. "Reserve fund."

Q. Any reason that you know of why that should be called depreciation? A. None at all.

Q. Any way to determine that it was for depreciation? A. Not unless I went and examined the Company's books.

Q. And could you then determine whether it was depreciation, upon an examination of the Company's books? A. Well, I could determine it, if it was so applied by the Company. I could not determine whether it was really actual depreciation.

Q. Then there would be no way of determining whether in the Company's books the sum charged off for depreciation was an arbitrary charge-off, or whether it was really depreciation? A. Well, it might be possible, for instance, if the engineer had

gotten together, as I stated a minute ago, with the accounting end of the business, and made up a regular list of depreciation, and itemized that on the books of the Company; otherwise, I would not know the subject had been properly treated.

Q. Is there any way of the book-keeper's telling from looking at the books of any company whether a charge-off of a certain sum to depreciation is really depreciation or merely an arbitrary charge-off? A. Not of itself.

Q. Now take the next item in that column. A. The United Electric Light Company of Springfield. There is likewise \$25,000 for that company which was set aside for "depreciation fund."

Q. By whom? A. By the Company.

Q. That is, the Gas Commissioners' reports so show? A. Referring to the Gas Commissioners' reports, and I have let that stay as depreciation.

Q. You call that depreciation? A. Yes, sir; but there is also \$12,000, written off for a "reserve fund," which I have not included, or rather which I have taken out.

Q. And it is specified as a "reserve fund" in the Gas Commissioners' report? A. It is so specified in their report.

Q. What is the object of a "reserve fund?" A. Well, "reserve fund" could be applied in several different ways. It might be a fund that was simply taken out of the Company's so-called earnings, or surplus, with which to retire bonds, or it might be applied in any other way that they saw fit to apply it.

Q. Take the next instance. A. Worcester?

Q. Yes. Mr. Chase has in his section B of Table 11, for depreciation of the Worcester plant for the year 1897-98, the sum of \$36,075.58. A. I have not changed that at all.

Q. You have kept that same sum? A. I have kept it there.

Q. Why?

The CHAIRMAN. What is the need of that, as long as they agree, Mr. Brooks?

Mr. BROOKS. I am going to show why they should not agree. I am going to show that he is erring on the —

Mr. MATTHEWS. On the safe side?

Mr. BROOKS. He is erring on the unsafe side.

A. There is a very grave doubt whether that amount should be there as depreciation.

Q. That is what I am asking you. Why should it not be considered as depreciation? A. Because the Worcester company received \$30,000 as the premium on an increase of capital stock; and, undoubtedly, it is to be fairly presumed that the receipt of that money made them a little easy in finances, and they determined to write off more than they otherwise would for depreciation.

Q. Is there anything to show—is there anything to tell whether that was an arbitrary charge-off or not? A. Not as far as the Gas Commissioners' reports will show.

Q. But you have put it in as depreciation? A. I have let it stand.

Q. Now what do the red figures in this and other of your tables signify? A. In the divisible income column it means that the Brockton company had no divisible income, but their depreciation took all of their available profits, and left them a deficit of \$7,500.

Q. That is, according to the Gas Commissioners' reports? A. According to the Gas Commissioners' reports.

Q. What do the other red figures on this table indicate? A. In the column headed, "Income less sundry expenses other than for manufacturing," that is the balance of the sundry income minus the sundry expenses outside of manufacturing. For instance, you take the Haverhill case: they show \$780 in red; that means that the sundry expenses exceeded the sundry receipts by \$780. The one following it—Jamaica Plain—means that the sundry income exceeded the sundry expenses by \$492.

Q. Now, Mr. Foster, I see that you have in A and B of Table 11, a column headed, "Per cent. of income charged to depreciation." A. Yes, sir.

Q. And that column will give you, according to the Gas Commissioners' reports, the per cent. of income charged to depreciation? A. Yes, sir.

Q. What is the following figure? A. In statement A of Table 11 it varies from zero to 69.15 per cent. of income from sales.

Q. For Brockton? A. 69 per cent. of income from sales for Brockton.

Q. And in section B of Table 11 the per cent. of income charged to depreciation varies from zero to 25¼ per cent.? A. It does, yes, sir.

Q. Is there anything that you care to say further that I have not asked you with reference to those two sections of Table 11? A. I do not know of anything else, sir.

Mr. BROOKS. I see it is four o'clock, may it please your Honors. Shall I stop?

The CHAIRMAN. I would like to call your attention to one thing. I have only had a glance at this table. I suppose you can point out by the tables, or otherwise, wherein Mr. Chase is in error.

Mr. BROOKS. Yes, sir.

The CHAIRMAN. As I understand, these tables are tables which the witness has gotten together of his own notion, and by using them in that way to compare them with Chase's.

Mr. BROOKS. Yes, on Mr. Chase's theory. We do not agree to his theory, but—

The CHAIRMAN. I understand you do not agree to his theory, but you have presented here a mass of figures. What I would like to understand is exactly how they rebut Mr. Chase.

The WITNESS. May I—

Mr. BROOKS. It seems to me,—I don't know; I suppose they will explain themselves as they go on. Of course, it seems to me very plain that, if Mr. Chase is taken upon his own theory, you will see as you go through with this testimony—

The CHAIRMAN. He has presented a mass of figures.

Mr. BROOKS. I understand so. I have some cause to understand it.

The CHAIRMAN. Are not those tables purely and simply tables of his? They certainly have the heading of that.

Mr. BROOKS. No, sir. Mr. Foster takes them from the

same sources, and he simply shows where Mr. Chase is mistaken, assuming that Mr. Chase's theory is correct, which not for a moment do we admit.

The CHAIRMAN. Hold on; let us see about this.

"38 gas companies out of a total of 67 doing business in Massachusetts, which show a larger proportion of mains, three inches and under, than the City of Holyoke."

There we have a list; then we have another table, then we have certain summaries.

Mr. GREEN. There are new columns, independent columns, independent calculations that Mr. Chase did not prepare at all.

Mr. BROOKS. And there has been no suggestion from the other side of any such thing until the Chairman made the suggestion.

Mr. GREEN. I objected in the beginning.

The CHAIRMAN. I really think it is my business to call attention.

Mr. BROOKS. I don't object to it.

Mr. MATTHEWS. All that I understand counsel has offered so far is Mr. Foster's reconstruction of Mr. Chase's Table 11, sections A and B. We certainly objected to those at the time. I have not objected to the rest yet, because they have not been offered.

Mr. BROOKS. We purpose to put them in.

Mr. GOULDING. The demonstration by Mr. Foster will show that Mr. Chase is erroneous on his own theory. He has the wrong figures in the wrong places. And it will show further, by following the line of Mr. Chase's demonstration, a *reductio ad absurdum*. It will show that the theories of Mr. Chase lead to conclusions that are absurd. It is a criticism upon the scheme of Mr. Chase's evidence.

Mr. MATTHEWS. The line of distinction that I was trying to draw when the question arose, and we objected, was between the mere criticism of a witness for the defence by a witness in rebuttal and a complete reconstruction or recapitulation or revamping of evidence for the plaintiff that might have been introduced in his case in chief.

Mr. BROOKS. Had we any right to assume that any such absurd theory would be introduced here as was promulgated through Mr. Chase?

Mr. MATTHEWS. We do not object to criticism.

Mr. BROOKS. That is what this is. We say, You take Mr. Chase on his own theory, and we will prove that his theory is ridiculous and that his conclusions are foolish. I should be very glad to have your Honors take that table, and look it over during the evening.

Mr. MATTHEWS. All the tables, do you mean?

Mr. BROOKS. Certainly, and see if they are not correct. You understand, gentlemen, that these are not new tables; they are the same tables that Mr. Chase had.

Mr. MATTHEWS. They are amplified in parts, aren't they, Mr. Brooks?

Mr. BROOKS. He simply takes, in certain instances, the Gas Commissioners' reports as they are, stating what they do, and says that Mr. Chase has made certain errors in his figures.

Mr. GREEN. The facts you add — of course, we are looking at this for the first time, but haven't you columns involving things that Mr. Chase has not at all?

Mr. BROOKS. I do not know of anything,—any column involving anything that Mr. Chase does not have in some form.

Mr. GREEN. (To the witness.) Isn't that so?

The WITNESS. I suppose you have reference to these —

Mr. BROOKS. The percentage columns? We have a right to put them in.

The WITNESS. I have got to put those in to criticise Mr. Chase's divisible income, because he has not brought them out.

Mr. GREEN. Is the per cent. of depreciation necessary for that purpose?

Mr. MATTHEWS. Mr. Chase did not carry it out in each case. Mr. Chase had the average of the whole, Mr. Foster. You put in the percentage of gross income charged off to depreciation in each instance?

The WITNESS. Yes, in order to show the variations.

Mr. BROOKS. We think, if your Honors get a proper

understanding of these papers, there will be no hesitancy in allowing them to be introduced.

(The Commissioners consulted.)

Mr. MATTHEWS. Mr. Brooks, will you allow me to ask if you have the Gas Commissioners' reports?

Mr. BROOKS. Have we here?

Mr. MATTHEWS. Yes.

Mr. BROOKS. No, we have not.

Mr. MATTHEWS. Mr. Whitham, haven't you the report for 1897-98?

Mr. WHITHAM. Not in this room.

Mr. MATTHEWS. Have you them in Springfield?

Mr. BROOKS. Yes, we have them all here.

The CHAIRMAN. My own impression is that this evidence should be admitted as a criticism of Mr. Chase's testimony, purely and simply—

Mr. GOULDING. That is all we ask.

The CHAIRMAN. I understand. If the witness should undertake to go beyond that, we later will cut off that part which affects that—

Mr. GOULDING. We claim that no part of it should be cut out, and we want to be heard before you cut it out. It is a perfectly simple proposition, which any intelligent gentleman can understand in ten minutes, to show that, if he makes certain combinations for the purpose of producing certain results, we can do the same thing; and so we can produce millions of combinations,—

The CHAIRMAN. I propose to finish what I was about to say.

Mr. GOULDING. I propose to protest respectfully,—I beg pardon, if I interrupt; I was not aware that you were delivering judgment at the time.

The CHAIRMAN. Oh, no. I say, we propose to take this evidence so far as criticism of Mr. Chase. If on examination we discover that part of it is independent testimony on the part of this witness, we shall feel it our duty to exclude it.

Mr. GOULDING. I suppose you would do that after you had heard the parties to any reasonable extent.

The CHAIRMAN. Why, certainly.

Mr. MATTHEWS. We, of course, have full right to cross examine?

The CHAIRMAN. No question about that.

Mr. MATTHEWS. That is all right, then. They can put in all the criticism they want.

Mr. BROOKS. Do your Honors care to take that schedule? If you do, if you will be kind enough to have it here in the morning, I should like it.

Mr. COTTER. You may take it, Mr. Brooks.

(Adjourned to Thursday morning, May 2, 1901, at ten o'clock.)

SEVENTY-FOURTH HEARING.

SPRINGFIELD, Thursday, May 2, 1901.

The Commissioners met at the Court House at ten o'clock.

WILLIAM H. FOSTER, *resumed.*

Direct examination by Mr. BROOKS, continued.

Q. Mr. Foster, what does Table 11, section C, represent ; and to what table of Mr. Chase's does it apply? A. It applies to the corresponding table, statement C of Table 11.

Q. Just be kind enough to explain to the Commission the method that you took in making up this table,—what it represents and what the conclusions are? A. Well, the method pursued is identical with that pursued in statements A and B of Table 11. The results obtained, the differences shown, are as follows: on Mr. Chase's statement, manufacturing profit is stated to be \$472,247.

Q. That is found by adding the column of manufacturing profit for gas and the column of manufacturing profit for electricity of Chase's table together? A. Yes, sir.

Q. Now go on. A. The manufacturing profit, as I make it in recasting the table, is \$485,839.33. The depreciation as shown by Mr. Chase is stated as \$118,423. In my recast I make it \$174,851.92. I would say in explanation of the difference there that it is occasioned by the fact that Mr. Chase in his table has omitted the depreciation which the Gas Commissioners state was charged off in that year, amounting to \$68,000.

Q. That was for the gas and electric works at Waltham? A. Yes.

Q. That is where, according to the Gas Commissioners' report, Waltham charged off for the year 1897-98 \$68,427? A. Yes, sir. That was omitted from Mr. Chase's table. I have included it in mine.

Q. And you have included it because it was so included in the Gas Commissioners' report? A. In the Gas Commissioners' report. The divisible income consequently would be changed from \$353,822, as shown by Mr. Chase, to \$313,188.05. Of course, that is also taking into account the Waltham depreciation omitted by Mr. Chase.

Q. That is, you simply consider that still as depreciation? A. Simply thus far as depreciation.

Q. Very well. A. Now the figures as recast by myself would change the income from sales, by the Gas Commissioners' reports, from 25 per cent. of income from sales, as shown by Mr. Chase, to 22.1 per cent. income from sales. Now, if the table was made up in the same manner that Mr. Chase made it up, eliminating Waltham depreciation, it would change the divisible income from \$353,822, as shown by Mr. Chase, to \$381,615.90; and the per cent. of income from sales would then be increased, from that shown by Mr. Chase, to 26.9 per cent. The per cent. of income charged to depreciation, of course, in Tables A, B, and C, which Mr. Chase used in other parts of his pamphlet, would, of course, be changed. The per cents. in these three tables vary from zero to 79.76 per cent.

Q. According to the Commissioners' showing, what is the divisible income from the Waltham plant for the year '97-'98?

A. Including depreciation and everything, it shows about \$49,000 deficit.

Q. That is shown by your red figures? A. Yes, sir.

Q. Now, Mr. Foster, is there any way of determining what that \$68,000, which is in the Commissioners' reports as depreciation for the Waltham plant, really is? A. Not without a personal examination of the books.

Q. Now the town of Chelsea, according to the Gas Commissioner's reports, had a "sinking fund" of \$5,000. A. That was included by Mr. Chase in his amount of depreciation.

Q. Is there any reason to be drawn from the Commissioners' reports as to why that should be? A. That is something we don't know about.

Q. You have taken it as the Commissioners' reports showed it, a "sinking fund"? A. Yes, sir.

Q. For the city of Lawrence, according to the Gas Commissioners' reports, there is a "reserve fund" of \$7,000? A. Yes, sir. The argument for leaving that out is very much stronger in that case than in the others. In the Gas Commissioners' reports you will see there are several different classes, some styled "depreciation," some "depreciation fund"—

Q. This is for Lawrence? A. Yes, sir. And also some styled "reserve fund." It is not fair to assume that they intended this \$7,000 to be applicable to "depreciation."

Q. Then you do not include that in your depreciation? A. The \$7,000 "reserve fund," certainly not, no, sir.

Q. Is there anything more with reference to Table 11, section C? A. Simply the statement that I have recast shows the per cent. of the income charged to depreciation to be 12.35 per cent.

Q. As against what? A. 8.37, shown by Mr. Chase.

Q. Still including Waltham, with \$68,000? A. Yes, sir. Eliminating Waltham, as Mr. Chase has done, the per cent. of depreciation charges to income from sales would be changed from 8.37 per cent. to 7.52 per cent.

Q. And what is the variation for these nine cities doing both gas and electric business in per cent. of income charged to depreciation?

Mr. MATTHEWS. Just wait a moment, Mr. Brooks. Mr. Robb has the only report we have.

Mr. BROOKS. We would like to take that, too.

Mr. MATTHEWS. There is just one thing we want to look up.

Mr. BROOKS. All right. Now will you repeat my question?

(Question read by stenographer.)

A. From 0 to 79.76.

Q. And the 79.76 per cent is for the plant at Waltham?

A. Yes, sir.

Mr. MATTHEWS. Is this gas or electric?

The WITNESS. Gas and electric.

Mr. BROOKS. Nine companies, you know.

Q. Now your Table 12 is a summary of your Table 11? A. Yes, sir.

Q. And just what does that show? A. Well, it shows changes in almost every respect.

Q. And this table—this summary of Table 11 corresponds to Mr. Chase's summary of Table 11? A. Yes, sir, it is styled Table 12.

Q. And yours you call Table 12? A. Yes, sir; do you wish me to state the differences?

Q. Mr. Foster, will you be kind enough to turn to the Gas Commissioners' report for that year to the town of Waltham—Strike out that other question and answer, because I got the cart before the horse, and tell me what dividend the Waltham plant paid for this year, when \$68,000 was charged off for depreciation, and when the divisible income was \$48,971 less than nothing, according to the Gas Commissioners' report. A. Six per cent. dividend, amounting to \$8,400.

Q. Now we will run along again to Table 12, which is your summary of Table 11; and I will ask you what that shows, what in results? A. Well, there are four columns, first headed, "Percentage of operating expenses less residuals in case of gas companies to gross incomes from sales." Mr Chase's table states that the fifteen companies doing gas business would show 60 per cent. That I find to be practically correct, or 59.98 per cent.; eleven companies doing electric business,—there is only a slight change there, Mr. Chase stating it 61.84 per cent. and I finding it to be 61.50; the nine companies doing both gas and electric changed from 66.63—

Mr. BROOKS. Perhaps I can shorten it. Then this summary shows the changes that you made by your investigation of the Gas Commissioners' reports in the tabulations that Mr. Chase has put in evidence up to this point? A. Yes, sir.

Mr. MATTHEWS. What table is that?

Mr. GOULDING. Table 12, summary of Table 11.

The WITNESS. The third large sheet, Mr. Matthews.

Q. Now how many different combinations with the same 15 gas companies that Mr. Chase—with 15 gas companies of

this State could be made which would show zero for depreciation? A. 3,876 different combinations of 15 companies each.

Q. Yes. And how many combinations of 11 electric companies which would show zero for depreciation, written off according to the Gas Commissioners' report? A. 129,024 — what is that figure, 450 or 480?

Q. 480. A. 129,024,480 different combinations embracing 11 companies each; that is different combinations.

Q. Now what did you find to be the depreciation for these 15 gas companies for the year 1897 and 1898? A. I find the depreciation charged by 15 gas companies as stated by Mr. Chase for the year 1897 and 1898 to be 340 per cent. greater than the preceding year.

Q. And those are the same 15 gas companies that Mr. Chase — A. The same companies.

Q. Now what did you find to be the depreciation for the 9 gas and electric companies combined, which Mr. Chase took for the year 1897 and 1898, for the previous year, in per cent.? A. 240 per cent. larger.

Q. Now that Table 12 in your tabulation we take up next in order, the three — four smaller sheets, which are the apparent beginning of your tabulation? A. Yes, sir.

Q. The first of these smaller sheets is, you say, a recapitulation of Table 11, recast? A. Yes, sir.

Q. And what are the sheets — and extended to embrace all the companies of the State? A. Yes, sir.

Q. And what are the following three tables? A. Details of the amounts shown in the recapitulation.

Q. Now will you be kind enough to explain that recapitulation? A. Well, the 15 gas companies —

Mr. GREEN. Which page?

Mr. BROOKS. The first long sheet.

The WITNESS. Mr. Chase in his Table 11 takes 15 gas companies which show, according to my recast, 10.89 per cent.

Q. Per cent. of what? A. Depreciation to income. There are in the State 44 gas companies. I have made up a table including the other 29 companies, which only show 1.01 per cent.

Q. That is still from the Gas Commissioners' report? A. Yes, sir.

Q. 1.01 per cent. of depreciation? A. To income. That would make a total for the 44 gas companies in the State of 5.29 per cent.

Q. Yes. Against Mr. Chase's 10.89? A. Well, Mr. Chase stated it in his report as 12.13.

Q. Oh, yes, 12.13. Change that. As against Mr. Chase's 12.14? A. 12.13.

Mr. MATTHEWS. The witness is comparing all the companies in the State with Mr. Chase's 15?

Mr. BROOKS. Certainly.

The WITNESS. The 11 electric companies used by Mr. Chase he figures as 12.35; in my recast I show it as 11.55. There are 62 companies in the State.

Q. You take the other 51? A. I take the other 51, which show 7.49 per cent.

Q. Of depreciation to income? A. Of depreciation to income.

Q. Which makes the per cent. of depreciation as stated in the Gas Commissioners' report for all the electrical companies of the State how much? A. 8.81 per cent.

Q. And all this recapitulation that you have spoken of relates to the same year, 1897-98? A. 1897-98, yes, sir.

Q. What year in the Gas and Electric Light Commissioners' reports, and according to the reports, shows the greatest per cent. of depreciation? A. Oh, yes, by far.

Q. What year, I asked you? A. Oh, 1897-98.

Q. Now proceed with your recapitulation and extension table. A. Mr. Chase takes 9 gas-electric companies in Table 11, states the percentage of depreciation to income from sales to be 8.37. In my recast I have included Waltham, which brings it to 12.35. There are 14 other companies in the State which, on the same basis, show 2.09 per cent. of depreciation to income.

Q. So the rest of the companies of the State show 2.09 per cent., according to the Gas Commissioners' report? A. Yes, sir.

Q. Charged off to depreciation? A. Yes, sir.

Q. Of the income. All the 23 companies of the State would show charged off to depreciation, according to the Gas Commissioners' report, what per cent.? A. 8.14 per cent.

Q. That is still for the year 1897-98? A. 1897-98, yes, sir.

Q. Go ahead. A. Making a total for the whole State of 129 companies, all in the State, it would show 7.24 per cent. depreciation to income charged off for the year 1897-98.

Q. That takes in all the gas and electric companies? A. Yes, sir.

Q. And all the companies doing both gas and electric business? A. Yes, sir. Of course, it also includes the amount of Waltham depreciation.

Q. Of \$68,000? A. \$68,000.

Q. Go along with that, Mr. Foster. A. Of the 129 companies in the State there are 14 companies which show a larger percentage than 25 per cent. of depreciation charged off to income from sales, their average being 41.8 per cent. for the 14 companies; and that would leave 115 companies which show only 4.9 per cent. charged off.

Q. All this—you mean by that, charged off as shown by the Gas and Electric Light Commissioners' reports? A. Yes.

Q. Now proceed with the rest. A. I have a list of those 14 companies, if you would like to—

Q. The concluding part of this first smaller sheet entitled "Recapitulation" shows the 14 companies which have written off this large depreciation, according to the Gas Commissioners' report? A. Yes, sir, from 25.3 per cent. to 116 per cent.

Mr. BROOKS. According to the Gas Commissioners' reports.

Q. What does the table shown upon the first page of your series of tabulations show, and how are your results arrived at?

The CHAIRMAN. What table is that?

Mr. BROOKS. The very first one. The first large page.

A. In Mr. Chase's Table 8 is shown the proportion of small sized mains. He stated 24 companies, and found an average of 42.9.

Q. Small sized mains, three inches and under? A. Small sized mains, three inches and under. And he compared those with Holyoke, which shows about 54 per cent.

Q. Of what? A. Of mains three inches and under to the total miles. I have prepared a list showing 38 companies out of a total of 67, doing a gas business in Massachusetts, which show a larger proportion of mains three inches and under than the City of Holyoke. That is, each individual company shows a larger percentage.

Q. Exactly. That is, each of these 38 companies shows a larger per cent. of mains three inches and under than does the gas plant at Holyoke? A. Yes, sir, the percentage of 38 companies being 62.9 per cent.

Q. Small mains, three inches and under? A. Yes.

Q. Do you recall what the percentage of small mains at Holyoke, three inches and under, was in 1898? A. 54 per cent.

Mr. BROOKS. I would like to mark this Table 8.

The CHAIRMAN. Table 8?

Mr. BROOKS. Table 8, so that it may be compared with Mr. Chase's Table 8. I see it hasn't been marked.

Mr. MATTHEWS. Which one is that?

Mr. BROOKS. That is the very first large one.

Q. Now turn to Table 13. A. Yes, sir.

Q. Which you use in comparison with Mr. Chase's Table 13? A. Yes, sir.

Q. And which was made up after the same method that Mr. Chase pursued? A. Yes, sir.

Q. And all drawn still, of course, from the Gas and Electric Light Commissioners' reports? A. Yes, sir.

Q. Now, Mr. Foster, will you state what that table shows, and your conclusions, and how you arrived at them? A. In Mr. Chase's column 1 of Table 13 he states the depreciation to be \$437,759.78. I make it \$365,146.39.

Q. Yes. A. In column 2, for the year 1895-96, he shows a depreciation of \$259,211.20.

Q. That is what he shows? A. Yes. I show it as

\$122,546.07. In column 3, for the year 1896-97, Mr. Chase shows a depreciation of \$111,194.29.

Q. Yes. A. My recast shows it as \$80,845.23. For the year 1897-98, as shown by Mr. Chase in column 4, the depreciation amounts to \$469,782.80. My recast shows it to be \$426,326.94. Column 5, for the year 1898-99, Mr. Chase shows the depreciation to be \$226,026.91. My recast shows it as \$145,350.20. Column No. 6 shows the total for five years.

Q. Column No. 6 of Mr. Chase, I suppose? A. Of Mr. Chase, yes.

Q. Just keep that in mind, Mr. Foster, so that it will appear clearly on the record. A. Mr. Chase shows it to be \$1,503,974.98.

Q. Whose is that? A. Mr. Chase's. My recast shows the total depreciation for the five years to be \$1,140,214.83.

Q. Your column of averages? A. Column No. 7 is an average for the five preceding years. For the five years Mr. Chase shows the average to be \$300,795. My recast shows the average for the five years to be \$228,042.96.

Q. Will you proceed with the other columns? A. Column No. 8, in which Mr. Chase shows the companies making gas only, states the total depreciation to be \$136,091.31. In my recast I make that amount \$89,722.48.

Q. Yes. A. In column 10, depreciation per thousand cubic feet sold. That is only a very slight variation from what is shown by Mr. Chase. The year 1897-98 —

Q. According to the Gas Commissioners' reports? A. According to the Gas Commissioners' reports, the amount charged off in that year by the separate companies as depreciation is 527 per cent. larger than the preceding years.

Q. Yes. A. It is 186 per cent. larger than the average for the five years.

Q. That is, the amount charged off for the year 1897-98 is 186 per cent. larger than the average for the five years? A. Yes, it is 186 per cent. larger than the average for the five years. The amount charged off for depreciation in this year 1897-98 is 37 per cent. of the total charged off for all these companies for five years.

Q. Now, supposing you hadn't taken the same combination of these gas companies that were taken by Mr. Chase, and had taken other combinations of the same number of companies, what would have been the result?

Mr. GREEN. Just a moment. I don't know that it is strange, but it seems to me that is not in answer to Mr. Chase. What could be done if something else was taken is not an answer to Mr. Chase's tables.

Mr. GOULDING. Mr. Chase's tables were selected arbitrarily. And twenty-four companies for the total of those companies were selected for other and distinct purposes. That had nothing to do with the case.

Mr. GREEN. We don't know. But Mr. Prichard used the same number.

Mr. GOULDING. Mr. Prichard took them for different purposes,— for the purpose of showing how much gas was sold and the average, and how much per capita of electric light was sold. Then Mr. Chase selected them arbitrarily.

Mr. MATTHEWS. Didn't Mr. Chase take the same companies Mr. Nettleton did for the purpose of showing the net divisible income?

Mr. GOULDING. Not at all, not at all. None of them undertook to show the net divisible income from those cities. Mr. Prichard selected twenty-four cities for a distinct purpose; that is, to show how much the average price per thousand feet was for gas sold, as a matter of fact; and, second, how much per capita of electricity was sold. Now that is the purpose that he took them for; and, for Mr. Chase to select those because Mr. Prichard had referred to them for another purpose, it was simply arbitrary.

Mr. MATTHEWS. We say, your Honors, that Mr. Prichard used that table as a stepping-stone in his process of capitalizing the net earnings of the Company.

Mr. BROOKS. I don't see how that makes any difference, anyway, because we have a right to show that, instead of taking a certain combination that Mr. Chase took, if he had taken the same number of other companies, it would have given different

results, in millions of instances, I think we can say with safety, to show the absurdity and unreliability of Mr. Chase's theories.

The CHAIRMAN. We think we will admit this, Mr. Matthews, without passing on the question that we have just discussed.

Mr. BROOKS. What was that question that I asked? Perhaps I will change it.

(The question was read, as follows):—

“Now, supposing you had not taken the same combination of these gas companies that were taken by Mr. Chase, and had taken other combinations of the same number of companies, what would have been the result?”

A. I certainly could not tell you, because I have not had time to go into it.

Q. I mean the result in number of combinations? A. Well, as far as that is concerned, there could have been different combinations of 15 companies each,—this does not include permutations,—

Q. 15 gas companies out of the 44? A. Out of the 44—I could have made 229,911,617,056 different combinations of 15 companies each, of which there could have been made up combinations, each embracing 15 companies, to the amount of 3,268,760, which would each show a different result for depreciation charged off.

By the CHAIRMAN.

Q. 229 billion? A. 229 billion.

Mr. MATTHEWS. Are you asking him now for these 229 billion combinations?

Mr. BROOKS. I do not think we need to. Mr. Matthews will cross examine him on each of the 200 billion combinations.

By Mr. BROOKS.

Q. Now, Mr. Foster, is there anything further that you desire to say in explanation of Table 13? A. Table 13? No.

Q. Have you made up any table corresponding to Table 14 of Mr. Chase? A. I have not made up any table, no, sir.

Q. Have you made an examination of Table 14 of Mr.

Chase? A. In Mr. Chase's table he uses there the depreciation for the gas companies as found in statement A of Table 11. The depreciation which he charges there is \$220,642. I have changed that depreciation to \$198,190.37.

Q. So that, upon his theory, and in accordance with the Gas Commissioners' report, the depreciation per thousand sold, instead of being 14.4 cents— A. Would be 12.9 cents. Of course, that figure is used in other places in his tabulations.

Q. Then our next table is Table 15, and that corresponds to Mr. Chase's Table 15? A. It does, yes, sir.

Q. Made upon his theory and your facts derived from the Gas Commissioners' report? A. Yes, sir.

Q. And that takes in the three years? A. It takes in five years.

Q. It takes in five years, yes; that is, it takes in the three intermediate years, other than those that Mr. Chase considered, up to the present point? A. Yes, sir.

Q. Will you be kind enough to explain that, and give us the results? A. I have extended this table to take in the three intervening years, and this slightly increases Mr. Chase's figures, but not very materially. It takes in the average for five years, which he shows to be \$572,154, which I change to \$578,684. It is more the principle applied than it is the results that are different. The depreciation he figures as 15.4 per cent. in that table, which I will explain when I reach Table 16. He gets that from Table 16.

Q. From his Table 16? A. From his Table 16. In my recast of Table 16 I change that 15.4 per cent. to 14.8 per cent., which would, of course, change the amount of depreciation which he takes from Table 16 from \$88,111.72 to \$85,645.23. At the bottom of Table 15 you will notice that he takes the total depreciation—that is, the average depreciation—from Table 13, which, I have just explained, I have changed from \$300,795 to \$228,042.96. This would leave the total depreciation for the gas companies, which is the object he wishes to arrive at in this Table 15, to be \$142,397 instead of, as he states it, \$212,683.28. So that would change the cents

per thousand cubic feet from 11.35 cents to 7.06 cents per thousand.

Q. Of depreciation per one thousand feet? A. Depreciation per one thousand feet sold, yes.

Q. Now that Table 15, you say, is derived from Table 16? A. Portions of it, yes.

Q. Now will you be kind enough to take Table 16, which corresponds with Mr. Chase's Table 16? A. Yes, sir.

Q. And explain it and give the result. A. This Table 16—

Q. Excuse me just a minute before you answer that question.

(Last question read.)

A. I have examined this table, and I find it incorrect; and I have prepared a statement built on the same lines he uses, and extended it, to take in all the companies of the State.

Q. Yes. Now what is the result? A. The result is that—I wish to state in the first place that these Tables 15, 16, and 17 intertwine in Mr. Chase's table as well as my own, each one being in some respects dependent on the others. In Table 16 it is simply depreciation. Table 17 is the income; so, in stating the differences from Mr. Chase's foot notes of Table 16, of course I have to use the data from Table 17. That changes his per cent. of income from 15.4 to 14.8 per cent.

Mr. GOULDING. Where do you find that on your table?

The CHAIRMAN. Table 17, 14.8 per cent., I find on Table 17.

The WITNESS. Table 17, changing it from what Mr. Chase stated it, as 15.4.

Q. You make it 14.8? A. 14.8, yes, sir.

The CHAIRMAN. The tables seem to explain themselves on that point.

Mr. BROOKS. Yes. We were in the wrong place, I guess.

The WITNESS. That is simply for the 11 companies used by Mr. Chase.

Q. Now, supposing you took all the companies? A. Take all the companies in the State, the balance, at least?

Q. Yes, all but those 11. A. Would show 8.9 per cent.; and then, taking the 11 and the balance of the State, it would show 10.8 per cent. depreciation to income from sales.

Q. Well, now, is there anything more to be said with reference to 16—do you think there is anything more that ought to be said with reference to 16 and 17? A. Yes, I should say—I have prepared—

Q. Until we come to the question of the variations? A. I have prepared a table showing the variations.

Q. Now will you explain that table, showing the different variations in per cent. of depreciation to gross income found in Tables 16 and 17, and as extended to take in all the electric companies in the State? A. The statement is divided up in order to show the difference between the eleven companies taken by Mr. Chase.—

Mr. BROOKS. No. 12, I believe.

The WITNESS. The balance of the State, and also combining all in the State; that would show for the year 1895, the eleven companies, 15.4 per cent. of depreciation to income. the balance of the State showed 8.4, while the total for the State only showed 10.7 per cent. Now that is followed right down by all the five companies—

Q. And for all the five years? A. Yes.

Q. You mean for all the five years rather than the five companies? A. Five years. I just give the total for the five years. The total for the five years which show the eleven companies.

Q. Is that the total average? A. Total averaged by 14.8 per cent., for the eleven companies, as against Mr. Chase's 15.4, the balance of the State to be 8.9 per cent, and the whole State combined to be 10.8 per cent.

Q. That is, that is the average according to the Gas Commissioners' report? A. Yes, sir.

Q. Now— A. There are several things in connection with that statement which are very peculiar.

Q. Well, now, take—of the 11 companies you take 6, do you not, to determine how much of the gross income, according

to the Gas Commissioners' reports, they wrote off for depreciation? A. I don't think I understand the question.

Q. That is, you took—I will change my question—The lower part of your schedule shows that you took 6 companies.

A. Oh, yes, I see.

Q. And that shows the amount of depreciation written off for each of those 6? A. Yes, sir.

Q. In percentage? A. Yes, sir.

Q. In a single year? A. In one single year, yes, sir.

Q. Now will you just explain that? A. Well, in this statement Woburn in one year wrote off 143 per cent. of the gross income, Weymouth wrote off 121 per cent. of the gross income, Attleboro in one year wrote off 99 per cent. of the gross income, Framingham wrote off 86 per cent. of the gross income, Orange wrote off 82 per cent. of the gross income, Springfield wrote off 69 per cent. of the gross income,—wrote it off,—in each case wrote it off as depreciation.

Q. Wrote it off as depreciation, according to the Gas Commissioners' report? A. In one year.

Q. In one year? A. Then in this statement the variations for the different companies are as follows: for the 11 companies used by Mr. Chase, per cents. vary from 5.9 to 27 per cent., while the per cents. vary in all the companies in the State from 0 to 33.8 per cent.

Q. Written off for depreciation? A. Yes, sir.

Q. What do you mean by that,—the average for five years, the average depreciation for five years written off, varied from 0 to 33.8 per cent? A. I think it is.

Q. I wanted to make it certain. A. Yes, sir, the average.

Q. Now I would like to have that inserted in your table, in that table that will be marked.

Mr. GREEN. What is it you are going to insert, Mr. Brooks?

Mr. BROOKS. That it will show the average for five years.

The WITNESS. I think it does state that. I didn't notice it.

Mr. BROOKS. I don't see it in mine.

The WITNESS. (Examining sheet.) For the five years, per cents. vary from —

Q. I know, but why can't you say for the average of five years? Will you put that in? A. Yes.

Q. You say Woburn in one year — you take an instance of Woburn in one year, which, according to the Gas Commissioners' report, wrote off 143 per cent. of its gross income for depreciation. A. Yes, sir.

Q. In that same year, referring to the Gas Commissioners' reports, what did Woburn pay in dividends? I have it right here; you can see it. What per cent. in dividends did Woburn pay? A. They declared a dividend of 6 per cent., amounting to \$6,000.

Q. How much did Woburn pay in interest for that same year? A. \$7,103.96.

Q. And what was the amount in dollars charged off that same year at Woburn for depreciation? A. \$78,214.78.

Q. And what was the total for dividends, interest, and depreciation charged off at Woburn that year? A. \$91,318.74.

Q. And what was the manufacturing profit, according to the Gas Commissioners' report for that same year, at Woburn? A. \$14,790.16.

Q. Now, when Springfield wrote off 69 per cent. of its gross income for depreciation, how much was that depreciation in dollars for the United Electric Company of Springfield? A. They wrote off \$139,000 in the year ending —

Q. For depreciation? A. For depreciation, in the year ending June 30, 1899.

Q. Yes. What was its manufacturing profit that year? A. \$98,790.13.

Q. How much did it pay in dividends, this United Electric Company, for that same year? A. \$30,000.

Q. And how much did it pay in interest? A. \$12,902.86.

Q. And that amounted to \$42,902.86 paid in interest and dividends? A. Yes, sir.

Q. That it has charged off for depreciation \$139,000? A. Yes, sir.

Q. And its manufacturing profit, \$98,790? A. Yes, sir.

Q. For each of these combinations of various companies taken by Mr. Chase, both electric and gas, could you have made various combinations of the same number of companies that would each—each combination which would make different results? A. Certainly.

Q. And how many,—well, roughly, whether millions or billions? A. There are 24 companies doing gas business taken by Mr. Chase, and there are 57 gas companies that do a gas business in the State.

The CHAIRMAN. He asked you about those relating to Mr. Chase.

Q. Well, my question was this: Whether you could take the same number of companies that Mr. Chase has included in his various combinations, and obtain a different result in each combination? A. Different combinations, each containing 24 companies,—out of the 57 doing business in the State,—could be made up amounting to something over 900,000,000,000,000,000.

Q. Yes, and with reference to the various other combinations that are taken by Mr. Chase, whether or not a great many unlimited combinations, with the same number of companies—A. Certainly.

Q. — Could be made, and giving different results. A. Yes, a vast number, a vast quantity.

Q. I won't go into the quintillions, because that is beyond my conception. You have a table, a recast of Table 18? A. Yes, sir.

Q. Which is headed, "Recast, Table 18, showing great variation in cost for repairs per thousand feet sold"? A. Yes, sir.

Q. Does that take in all the gas companies in the State? A. Well, individually, it does not, because I did not go to the Gas Commissioners' office to get the private returns.

The CHAIRMAN. 24?

The WITNESS. 24 companies, yes. But I have extended the individual per cents., which showed great variation, and I have also from the Gas Commissioners' report taken the total repairs for the whole State.

Q. Yes, that is what I meant. A. Mr. Chase's average for the 24 companies he states at 15.9 cents; the total cost per thousand feet sold for repairs, taking in all the companies for the State, is only 10.9 per cent.

Q. Yes. And between what points does the cost of repairs vary per thousand cubic feet sold? A. They vary from 3.8 cents to 31 cents a thousand feet sold.

Q. In none of your combinations have you included the City of Holyoke? A. No, sir.

Q. And what does the last sheet of your tabulation show? A. That is a recast of Table 3, part D.

Q. Will you be kind enough to explain that table briefly? A. In the first place, Mr. Chase states that table D to be correction of Mr. H. A. Foster's sinking fund calculation. I would like to have that changed to Peter Wright's sinking fund calculation. In my recast of that table, the first six columns are identical with those prepared by Mr. Chase. In the last column he states as combined amounts to be annually set aside to be reinvested—at least amounts to be annually reinvested at simple interest.

Q. That is what Mr. Chase states in his last column? A. Yes, there has been no interest consideration at all. It states amounts simply without interest.

Q. By Mr. Chase—do you mean there is no entry of interest considered by Mr. Chase in the next column—you have spoken of Mr. Chase's last column, which column— A. The column I was stating, the next column headed "Total expiration value."

Q. The next column of your value? A. The amounts stated by Mr. Chase in previous column at 3 per cent. simple interest. In this column I have stated the amounts which would be at the expiration of the different years allotted renewed; for instance, you take the first one, the buildings and foundations, by setting aside Mr. Chase's estimate, \$2,404.30, setting that aside for the term of 50 years at 3 per cent. simple interest, it would amount to \$208,572, while the amount to be restored is only \$120,000.

Q. Yes. A. Of course, that goes through the whole table, and it would make a total by setting aside the amounts that Mr. Chase does; there would be a total of \$370,793 rolled up at the expiration of the periods allotted to the life of each article.

Q. Or part? A. Or part.

Q. Allotted by Mr. Chase, you mean, don't you? A. Yes.

Q. Well, put that in by Mr. Chase. A. By Mr. Chase, when there was only \$234,768 to be restored.

Q. To be restored according to Mr. Chase? A. No, there would be that amount to be restored according to the valuations upon which they based their calculations.

Q. Well, now, go ahead with your — A. I have added two columns —

Q. Now this — excuse me, this \$370,793 is at 3 per cent. simple interest? A. It is taking the amounts that Mr. Chase would set aside, and figured at 3 per cent. simple interest.

Q. Exactly. And at 4 per cent. simple interest what would have been the result? A. I have not figured the 4 per cent., but at 5 per cent. I have added two columns there stating the correct amount to be reinvested at 3 per cent. and 5 per cent. simple interest, which at the life allotted would eventually equal the amount to be replaced.

Q. That is, which would equal the \$234,763? A. \$234,768—

Q. \$68? A. Yes. At 3 per cent. simple interest the amount would be \$4,642.70.

The CHAIRMAN. A year?

The WITNESS. A year. Against Mr. Chase's \$6,856.83.

Q. That is at 3 per cent., At 5 per cent. the amount would be \$3,850.28 against Mr Chase's \$6,856.83. Figuring the amounts at 3 per cent. simple interest, it would increase the depreciation charge-off by Mr. Humphreys \$1,611.43.

The CHAIRMAN. Annually?

The WITNESS. Annually. Instead of \$3,825.56, as stated by Mr. Chase. And at 5 per cent. simple interest the amount to be written off annually for depreciation over that stated by Mr. Humphreys would be \$829.01. I have also pre-

pared a table illustrating the method by which this is arrived at. In taking the amount which I have stated, which at 3 per cent. simple interest would in 50 years equal \$120,215, this amount being \$1,385.76, and the table there will show the process by which —

Q. What is that? A. The last table simply illustrates the method by which that \$1,385.76 at 3 per cent. simple interest in 50 years equals the amount to be restored.

The CHAIRMAN. Well, how much?

The WITNESS. \$120,215.

Mr. BROOKS. Now, may it please your Honors, I desire to put in this tabulation of Mr. Foster's as an exhibit, and I would like to have it marked, and I should like to have the tabulation that is before your Honors marked.

The CHAIRMAN. Will that be printed?

Mr. BROOKS. Yes, I suppose so.

The CHAIRMAN. Then it won't need to be marked, I take it.

Mr. BROOKS. I suppose it has got to be marked, because every other one is. It can all be marked as one exhibit.

(Tabulation marked "Exhibit 247, S. M. S.")

[EXHIBIT 247.]

RECAPITULATION OF H. S. CHASE'S TABLE XI., AS RECAST
AND EXTENDED TO EMBRACE ALL THE COMPANIES IN
THE STATE.

	<i>Income.</i>	<i>Depreciation.</i>	<i>Per cent.</i>
<i>Gas Companies:</i>			
15 companies, Table XI.	\$1,818,996.80	\$198,190.39	10.89
29 companies, balance of State . . .	2,383,637.50	24,265.78	1.01
44 companies, all in State	\$4,202,634.30	\$222,456.17	5.29
<i>Electric Companies:</i>			
11 companies, Table XI.	\$1,251,568.80	\$144,614.32	11.55
51 companies, balance of State . . .	2,615,817.75	196,003.18	7.49
62 companies, all in State	\$3,867,386.55	\$340,617.50	8.81
<i>Gas and Electric Companies:</i>			
9 companies, Table XI.	\$1,415,142.33	\$174,851.92	12.35
14 companies, balance of State . . .	984,199.92	20,637.65	2.09
23 companies, all in State	\$2,399,342.25	\$195,489.57	8.14

<i>Recapitulation :</i>	<i>Income.</i>	<i>Depreciation.</i>	<i>Per cent.</i>
44 companies doing gas business	\$4,202,634.30	\$222,456.17	5.29
62 companies doing electric business	3,867,386.55	340,617.50	8.81
23 companies doing both gas and electric business	2,399,342.25	195,489.57	8.14
129 all companies in State	\$10,469,363.10	\$758,563.24	7.24
14 companies show (see list below),	\$643,768.86	\$269,163.56	41.8
115 companies show	\$9,825,594.24	\$489,399.68	4.9

14 COMPANIES SHOWING FROM 25.3 TO 116 PER CENT. OF INCOME
WRITTEN OFF AS DEPRECIATION.

	<i>Income.</i>	<i>Depreciation.</i>	<i>Per cent.</i>
Amesbury	\$9,593.80	\$11,167.67	116
Waltham	85,785.97	68,427.85	79.7
Brockton	50,608.43	35,000.00	69.2
Woburn	17,034.80	9,095.40	53.3
Grafton	4,627.05	2,000.00	43.2
Lee	6,822.92	2,675.11	39.2
Somerville	89,554.71	31,925.00	35.6
Fall River	144,842.26	46,000.00	31.7
Newburyport	33,219.47	9,568.45	28.8
Attleboro	10,905.75	3,062.43	28.1
Gardiner	22,128.95	6,149.08	27.7
Gloucester	34,143.38	9,393.14	27.5
Hyde Park	64,174.10	16,930.13	26.4
Pittsfield	70,327.27	17,769.30	25.3
14 companies	643,768.86	269,163.56	41.8

RECAST OF H. S. CHASE'S TABLE XI. EXTENDED TO EMBRACE
ALL COMPANIES IN STATE.

<i>Gas Companies.</i>	<i>Income.</i>	<i>Depreciation.</i>	<i>Per cent.</i>
Adams	\$10,808.41		
Amesbury and Salisbury	9,593.80	\$11,167.67	116
Arlington	16,997.70	338.27	1.9
Attleboro	23,097.10	460.88	1.9
Chicopee	16,159.11		
Citizens of Quincy	14,949.40		
Danvers	5,797.75	400.00	6.9
Dedham and Hyde Park	15,422.56		
Framingham	8,869.76	95.76	1.07
Gardiner	8,876.52	1,459.34	16.4
Greenfield	8,351.16	120.91	1.4
Ipswich	6,845.79		

<i>Gas Companies.</i>	<i>Income.</i>	<i>Depreciation.</i>	<i>Per cent.</i>
Leominster	\$7,359.07		
Marblehead	4,520.37		
Marlboro	16,381.58		
Milford	17,743.14		
Nantucket	3,986.00		
Natick	7,881.13		
Northampton	31,708.18	\$72.89	.2
North Attleboro	20,188.16	744.63	3.6
Norwood	10,631.48		
People's of Stoneham	8,402.05	200.00	2.3
Plymouth	9,129.75	40.91	.4
Williamstown	6,412.82	69.12	1.07
Woburn	17,034.80	9,095.40	53.3
Bay State	605,757.77		
Boston	1,060,271.13		
Dorchester	196,414.40		
Roxbury	214,046.62		
Totals	\$2,383,637.50	\$24,265.78	1.01

RECAST OF H. S. CHASE'S TABLE XI. EXTENDED TO EMBRACE
ALL COMPANIES IN STATE.

<i>Electric Companies.</i>	<i>Income.</i>	<i>Depreciation.</i>	<i>Per cent.</i>
Abington and Rockland	\$34,703.34	\$5,000.00	14.4
Adams	11,318.08		
Amesbury	18,957.51	1,239.65	6.5
Andover	12,045.43	627.82	5.2
Attleboro	10,905.75	3,062.43	28.1
Blackstone	6,891.02	50.00	.7
Block Plant	13,624.62		
Blue Hill	10,964.82		
Bridgewater	6,282.75		
Central Massachusetts	19,750.28		
Church Green	28,811.90		
Cohasset	8,727.08	500.00	5.9
Dedham	19,345.47		
Foxboro	198.96		
Framingham	20,650.70		
Franklin of Turner's Falls	3,820.56		
Gardiner	22,128.95	6,149.08	27.7
Grafton	4,627.05	2,000.00	43.2
Great Barrington	11,830.29		
Greenfield	17,139.43	2,500.00	14.5
Hyde Park	64,174.10	16,930.13	26.4
Lee	6,822.92	2,675.11	39.2
Lenox	4,889.98		
Leominster	22,330.15		

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<i>Electric Companies.</i>	<i>Income.</i>	<i>Depreciation.</i>	<i>Per</i>
Marlboro	\$21,720.61		
Milford	12,903.58	\$1,200.00	
Millbury	4,939.44		
Milton	17,635.21		
Nantucket	6,810.16		
Natick	32,215.11		
Northampton	30,061.67	1,000.00	
Orange	11,381.37		
Plymouth	24,902.43		
Quincy	34,400.11	4,562.98	13
Randolph	5,756.22		
Rawson	7,444.72		
Somerville	89,554.71	31,925.00	35
South Hadley Falls	4,268.65		
Suburban of Revere and Winthrop	31,776.22		
Suburban of Boston	86,560.73		
Union of Franklin	11,123.84		
Uxbridge and Northbridge	12,665.30	2,098.70	16
Ware	9,278.80		
Westboro	13,104.41	1,000.00	7
Western	4,738.10		
Weymouth	24,554.97		
Whitman	12,993.84	1,240.77	9
Winchendon	6,728.69		
Woburn	52,606.24		
Boston	755,538.36	52,241.31	6.9
Edison of Boston	909,213.12	60,000.00	6.6
Totals	\$2,615,817.75	\$196,002.98	7.4

RECAST OF H. S. CHASE'S TABLE XI. EXTENDED TO EMBRACE
ALL COMPANIES IN STATE.

<i>Gas and Electric.</i>	<i>Income.</i>	<i>Depreciation.</i>	<i>Per Cent.</i>
Amherst	\$17,162.23	\$3,341.70	19.4
Athol	19,614.98		
Beverly	34,306.51	465.53	1.3
Clinton	29,525.87	564.72	1.9
Cottage City	7,432.75	920.64	12.4
East Hampton	9,353.30		
Lexington	14,698.37		
Newburyport	33,219.47	9,568.45	28.8
Southbridge	22,422.43	2,932.89	13.08
Spencer	16,004.10		
Stoughton	6,196.47		
Webster	14,811.85		
Westfield	32,039.83	2,360.89	7.3
Brookline	727,411.76	483.83	.06
Totals	\$984,199.92	\$20,638.65	2.09

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RECAST OF H. S. CHASE'S TABLE XIII.

DEPRECIATION * 24 GAS COMPANIES FOR FIVE YEARS, 9 OF SAID COMPANIES DOING BOTH GAS AND ELECTRIC BUSINESS.

	No. 1. 1864-95.	No. 2. 1895-96.	No. 3. 1896-97.	No. 4. 1897-98.	No. 5. 1898-99.	No. 6. Totals.	No. 7. Average.	No. 8. Companies making gas only.	No. 10. Depreci- ation per M. cubic feet sold in cents)	Cubic feet sold.	Average for five years.
Brockton	—	\$2,678.02	—	\$35,000.00	—	\$37,678.02	\$7,535.60	\$7,535.60	26.0	144,572.6	28,914.5
Cambridge	\$8,675.00	—	—	42,000.00	—	128,750.00	25,750.00	25,750.00	12.9	996,411.4	199,282.2
Charlestown, G. & E.	4,000.00	3,223.21	\$6,277.28	25,748.21	\$10,514.24	49,762.94	9,932.59	9,932.59			
Chelsea, G. & E.	—	20,587.33	2,457.21	3,733.00	3,025.67	29,803.21	5,966.64	5,966.64			
East Boston	1,128.81	1,137.12	1,524.45	1,321.71	1,312.36	6,424.45	1,284.89	1,284.89	2.7	234,544.9	46,910.0
Fall River	—	126.36	232.72	46,000.00	—	46,350.08	9,271.81	9,271.81	9.3	493,794.7	98,758.9
Fitchburg, G. & E.	496.29	7,291.60	9,482.48	12,093.98	2,732.35	32,096.70	6,419.34	6,419.34			
Gloucester	—	—	—	9,393.14	—	9,393.14	1,878.63	1,878.63	7.7	119,307.1	23,861.4
Haverhill	1,180.85	1,500.00	427.31	1,943.17	—	5,051.33	1,010.26	1,010.26	1.2	399,732.9	79,946.5
Jamaica Plain	—	2,940.04	293.00	—	—	3,233.04	646.61	646.61	.9	342,720.6	68,544.1
Lawrence, G. & E.	5,000.00	10,609.93	10,943.46	16,000.00	11,500.00	54,053.39	10,810.68	10,810.68	.6	1,437,639.4	287,527.8
Lowell	—	1,749.80	5,882.93	2,039.93	—	9,672.66	1,934.53	1,934.53			
Lynn, G. & E.	22,000.00	33,000.00	—	6,000.00	—	63,000.00	12,600.00	12,600.00			
Malden	1,392.28	—	—	15,073.75	—	16,466.03	3,293.21	3,293.21	5.6	295,141.2	59,028.2
New Bedford, G. & E.,	7,342.91	9,480.87	6,137.82	21,133.51	56,587.49	100,682.60	20,136.52	20,136.52			
Newton, G. & E.	167,355.99	—	84.44	75,000.00	25,000.00	267,440.43	53,488.08	53,488.08			
North Adams, G. & E.,	15,300.00	—	—	—	—	15,300.00	3,060.00	3,060.00			
Pittsfield	—	—	—	985.04	—	985.04	197.01	197.01	1.2	79,134.8	15,826.9
Salem	20,000.00	—	—	—	—	20,000.00	4,000.00	4,000.00	9.3	215,320.8	43,065.9
South Boston	—	—	—	—	—	—	—	—			
Springfield	300.00	360.20	431.79	1,739.97	1,937.09	300.00	60.00	60.00	.05	587,607.6	117,521.5
Taunton	2,314.94	364.95	894.00	68,427.85	4,344.00	79,463.13	15,892.63	15,892.63	3.2	213,586.7	42,795.3
Walham, G. & E.	5,432.33	23,496.64	35,776.34	42,693.68	28,397.00	157,515.65	31,593.13	31,593.13			
Worcester	25,151.99	—	—	—	—	—	—	—			
H. S. Chase's figures	\$365,146.39 437,759.78	\$122,546.07 259,211.20	\$80,845.23 111,194.29	\$426,326.94 469,782.80	\$145,350.20 226,026.91	\$1,140,214.83 1,503,974.98	\$228,042.96 300,795.00	\$89,722.48 136,091.31	15.7 96.3 99.0	999,997.4 6,559,461.1	200,000.0 1,311,893.2

Depreciation for year 1897-98 is 52 1/2% larger than 1896-97.
 " " " " 37% of total for five years.
 " " " " 186% larger than average for five years.

RECAST OF H. S. CHASE'S TABLE XV., AS EXTENDED TO TAKE IN
THE THREE INTERMEDIATE YEARS.

	1895.	1896.	1897.	1898.	1899.
Charlestown . . .	\$42,983.00	\$40,589.08	\$38,942.71	\$36,665.25	\$37,672.00
Chelsea . . .	46,463.00	53,120.52	55,704.11	55,227.60	56,388.00
Fitchburg . . .	37,707.00	42,462.00	45,914.08	50,182.81	54,759.00
Lawrence . . .	74,613.00	83,006.26	84,840.04	87,396.50	87,869.00
Lynn . . .	124,207.00	127,503.70	129,194.82	135,528.59	135,338.00
New Bedford . .	89,589.00	89,241.00	93,009.42	96,120.98	94,977.00
Newton . . .	43,068.00	48,531.34	56,851.55	64,661.28	65,745.00
North Adams . .	25,248.00	28,705.84	38,991.07	41,558.98	43,293.00
Waltham . . .	37,719.00	41,463.87	39,422.01	44,281.71	46,670.00
Totals	\$521,597.00	\$554,623.61	\$582,869.81	\$611,623.70	\$622,711.00

	<i>H. S. Chase.</i>	<i>Figures as recast.</i>
Total for 5 years	—	\$2,893,423.00
Average (electric) for 5 years	\$572,154.00	578,684.00
Depreciation @ (15.4 H. S. C.) (14.8 as recast), Table XVI.	88,111.72	85,645.23
Total depreciation (Table XIII.)	\$300,795.00	228,042.96
Electric depreciation (Table XVI.)	88,111.72	85,645.23
Gas depreciation	\$212,683.28	\$142,397.73
Sales, 23 companies (South Boston out)	1,874,996,000 ft.	
Gas depreciation, per M feet sold	11.35 cents	7.6 cents

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NOTABLE VARIATIONS IN PER CENT. OF DEPRECIATION TO
GROSS INCOME FOUND IN H. S. CHASE'S TABLES XVI. AND
XVII., AS EXTENDED TO TAKE IN ALL ELECTRIC COM-
PANIES IN STATE FOR FIVE YEARS, ENDING JUNE 30, 1899.

	11 Companies.	67 Companies.	All in State.
Year, 1895	15.4	8.4	10.7
Year 1896	13.1	13.6	13.4
Year, 1897	10.1	9.3	9.6
Year, 1898	11.5	7.4	8.7
Year, 1899	23.3	7.5	12.4
5 years, 1895-99 4.	14.8	8.9	10.8
5 years. Springfield depreciation normal	12.9		
5 years. Except 2 Boston companies		8.8	
5 years. Except Springfield and Worcester,			9.8
5 years. Except Springfield and Worcester, 10.9	10.9		
5 years. Except Springfield, Worcester, and 2 Boston companies			9.8
Average of 5 years' per cent. varies from	5.9	.07	.07
To	27.0	33.8	33.8

1. Woburn, 1 year charged off 143 per cent. of gross income.
2. Weymouth, 1 " " " 121 " " " " "
3. Attleboro, 1 " " " 99 " " " " "
4. Framingham, 1 " " " 86 " " " " "
5. Orange, 1 " " " 82 " " " " "
6. Springfield, 1 " " " 69 " " " " "

RECAST OF H. S. CHASE'S TABLE XVIII., SHOWING GREAT
VARIATION IN COST FOR REPAIRS PER M FEET SOLD.

	<i>Gas sold in M cu. ft.</i>	<i>Cost of repairs, Items 6, 9, 11, from Commis- sioners' Report.</i>	<i>Cost in cents per M ft. sold.</i>
Brockton	\$32,996.00	\$1,601.65	4.8
Cambridge	215,131.00	38,764.67	18.0
Charlestown	118,713.00	14,583.13	12.2
Chelsea	30,524.00	4,690.07	15.3
East Boston	48,604.00	10,107.27	20.8
Fall River	122,496.00	8,786.46	7.1
Fitchburg	21,066.00	4,363.78	20.7
Gloucester	24,177.00	2,310.87	9.5
Haverhill	85,895.00	14,428.58	16.8
Jamaica Plain	76,619.00	11,264.93	14.7
Lawrence	98,577.00	20,052.02	20.3
Lowell	298,240.00	28,224.62	9.4
Lynn	144,444.00	40,019.90	27.9
Malden	64,111.00	16,845.89	26.2
New Bedford	66,403.00	4,242.98	6.4
Newton	93,817.00	29,141.91	31.0
North Adams	40,200.00	5,444.00	13.5
Pittsfield	16,487.00	3,504.16	21.2
Salem	47,213.00	9,835.76	20.8
South Boston	109,228.00	4,199.76	3.8
Springfield	127,110.00	14,883.11	11.7
Taunton	45,157.00	2,531.00	5.6
Waltham	26,936.00	5,613.15	20.8
Worcester	218,336.00	51,066.09	23.4
Total for 24 gas companies, as above,	\$2,172,480.00	\$346,505.76	15.9
Total for all gas companies in State .	4,602,652.00	501,693.04	10.9
Cost of repairs range from 3.8 cents to 31 cents per M cu. ft. sold.			

RECAST OF H. S. CHASE'S TABLE III.—PART D.
SHOWING WRONG INFERENCE TO BE DRAWN FROM HIS FIGURES.

No. 1. PLANT.	No. 2. Value.	No. 3. Value Years.	No. 4. Per cent. of value to be annually reinvested at 5 per cent.	No. 5. Annual amt. to be rein- vested at compound.	H. S. C. Figures.		Total expiration value of amounts stated by Mr. Chase in pre- vious columns at 3 per cent. simple interest.	Correct amount to be rein- vested at simple interest.		Value of \$1 at expira- tion of allotted time at simple interest.
					Per cent. at simple interest.	Annual amt. to be rein- vested at simple.		3 per cent.	5 per cent.	
Land, including water power . . .	\$72,000.00*									
Buildings, foundations, headgates, tailraces, etc.	120,215.00	50	†	\$606.08	2	\$2,404.30	\$208,573.00	\$1,385.76	\$1,080.58	\$111.25
Dynamos	20,920.00	20	3	627.60	5	1,046.00	26,882.00	810.11	709.15	29.50
Armatures, exciters, and meter . .	1,350.00	37	1	13.50	2.7	36.45	2,077.00	23.69	19.20	70.30
Switchboards and appliances . . .	3,359.00	26	2†	83.98	3.9	131.00	4,683.00	93.95	79.50	35.75
Transformers	1,005.00	20	3	30.15	5	50.25	1,291.00	39.10	34.06	29.50
Arc lamps	14,452.00	20	3	433.56	5	722.60	18,571.00	562.33	489.89	29.50
Meters	815.00	26	2†	20.38	3.8	30.97	1,107.00	22.79	19.29	42.25
Service, appliances, and erection .	3,257.00†									
Poles and setting, including mast arms	9,928.00†									
Wire	11,432.00	25	2	228.64	4	457.28	15,547.00	336.23	285.80	40.00
Pole-line appliances	885.00*									
Boiler-house machinery	7,175.00	25	2	143.50	4	287.00	9,758.00	211.03	179.37	40.00
Steam piping	2,605.00	25	2	52.10	4	104.20	3,543.00	76.61	65.12	40.00
Engine-room machinery	11,500.00	37	1	115.00	2.7	310.50	17,692.00	201.82	163.58	70.30
Wheel-house machinery	17,060.00	50	1†	85.30	2	341.20	29,599.00	196.65	153.34	111.25
Basement main building machinery, shafting	18,983.00	26	2†	474.57	3.9	740.23	26,463.00	531.00	449.30	42.25
Belts	3,897.00	20	3	116.91	5	194.85	5,007.00	151.63	132.10	29.50
Office, furniture, tools, etc. . . .	805.00†									
Total of accounts marked * and †	\$321,643.00			\$3,031.27		\$6,856.83	\$370,793.00	\$4,642.70	\$3,860.28	
Total value to be replaced	\$234,768.00									

Total depreciation by percentages \$6,856.83
Total depreciation allowed by A. C. Humphreys 3,031.27
Differences \$3,825.56

* No depreciation necessary. † Current renewals should be sufficient.

EXAMPLE OF DEPRECIATION ALLOWANCES (TABLE III., PART D). AMOUNT \$1,385.76, WHICH, IF SET ASIDE AT 3 PER CENT. SIMPLE INTEREST, WOULD IN FIFTY YEARS EQUAL VALUE TO BE REPLACED, \$120,215.00.

	<i>Principal.</i>	<i>Interest.</i>	
3 per cent. on	\$1,385.76	\$41.57	1 year
" " "	2,771.52	83.14	2 years
" " "	4,157.28	124.72	3 "
" " "	5,543.04	166.29	4 "
" " "	6,928.80	207.86	5 "
" " "	8,314.56	249.44	6 "
" " "	9,700.32	291.01	7 "
" " "	11,086.08	332.58	8 "
" " "	12,471.84	374.15	9 "
" " "	13,857.60	415.73	10 "
" " "	15,243.36	457.30	11 "
" " "	16,629.12	498.87	12 "
" " "	18,014.88	540.45	13 "
" " "	19,400.64	582.02	14 "
" " "	20,786.40	623.59	15 "
" " "	22,172.16	665.16	16 "
" " "	23,557.92	706.74	17 "
" " "	24,943.68	748.31	18 "
" " "	26,329.44	789.88	19 "
" " "	27,715.20	831.46	20 "
" " "	29,100.96	873.03	21 "
" " "	30,486.72	914.60	22 "
" " "	31,872.48	956.17	23 "
" " "	33,258.24	997.75	24 "
" " "	34,644.00	1,039.32	25 "
" " "	36,029.76	1,080.89	26 "
" " "	37,415.52	1,122.46	27 "
" " "	38,801.28	1,164.04	28 "
" " "	40,187.04	1,205.61	29 "
" " "	41,572.80	1,247.18	30 "
" " "	42,958.56	1,288.76	31 "
" " "	44,344.32	1,330.33	32 "
" " "	45,730.08	1,371.90	33 "
" " "	47,115.84	1,413.47	34 "
" " "	48,501.60	1,455.05	35 "
" " "	49,887.36	1,496.62	36 "
" " "	51,273.12	1,538.19	37 "
" " "	52,658.88	1,579.77	38 "
" " "	54,044.64	1,621.34	39 "
" " "	55,430.40	1,662.91	40 "
" " "	56,816.16	1,704.48	41 "
" " "	58,201.92	1,746.06	42 "

	<i>Principal.</i>	<i>Interest.</i>	
3 per cent. on	\$59,587.68	\$1,787.63	43 years
" " "	60,973.44	1,829.20	44 "
" " "	62,359.20	1,870.78	45 "
" " "	63,744.96	1,912.35	46 "
" " "	65,130.72	1,953.92	47 "
" " "	66,516.48	1,995.49	48 "
" " "	67,902.24	2,037.07	49 "
" " "	69,288.00		50 "
Principal		\$69,288.00	
Interest		50,926.64	
Total		\$120,214.64	

Q. Mr. Foster, have you looked over Mr. Chase's Table 1 of part D? A. Yes, sir.

Q. Contained on page 157 of Vol. IX.? A. I have.

Q. Whether or not in the statement that came in through you early in the evidence you included all the legal expenses paid by the Company for the gas and electric departments?

A. I did, yes, sir.

Q. And did you include all the liability expenditures paid by the companies? A. Accidents and damages?

Q. Yes, sir. A. Yes, sir.

Q. Mr. Chase in his tabulation, in order to arrive at the expenditure for legal expenses that should be charged off by the gas plant and electric plant of the Holyoke Water Power Company, includes Boston, does he not? A. Yes, sir. That is the only place in which, I believe, he does include Boston.

Q. I was going to ask you that. Does he include Boston in any other spot in his tabulations? A. I do not think it is included in any other portion.

Q. And of the \$25,746.86 expended by all the companies in the State for legal expenses, how much did Boston spend?

A. Over \$20,000.

Q. How many of the gas companies in the State out of the total, according to the Gas Commissioners' reports, allow for legal expenses? A. Thirty-two, their expenses varying from \$1 to \$15,000.

Q. And that includes still Boston? A. That is one of the Boston companies.

Q. One of the Boston companies?

Mr. MATTHEWS. Mr. Brooks, where does the witness get that from?

Mr. BROOKS. From the Gas Commissioners' reports.

Mr. MATTHEWS. Annual reports?

The WITNESS. No, that is from Mr. Chase's testimony, on pages 394, 395.

The CHAIRMAN. One gas company pays only a dollar a year for legal expenses?

The WITNESS. That is all they returned.

The CHAIRMAN. That ought to be reformed.

Mr. BROOKS. I can show a better record than that.

Mr. MATTHEWS. The witness does not say how much they paid the next year or the year before.

Mr. BROOKS. He is taking Mr. Chase's testimony.

Q. Mr. Foster, do you know how much was spent from the beginning of the electric plant for legal expenses?

The CHAIRMAN. Of the Holyoke Company?

Mr. BROOKS. At Holyoke, if anything.

Mr. MATTHEWS. I do not see how that is material.

Mr. BROOKS. I think it is quite material.

The CHAIRMAN. I think that meets your proposition on the general amount of legal expenses.

Mr. BROOKS. We purpose to show it.

Mr. MATTHEWS. I do not care to argue it.

Q. What is it? A. I could not state the amount.

Q. Was it anything? A. I guess I didn't hear the question.

Q. I am talking about the electric plant of the Holyoke Water Power Company. Was there ever any expenditure for legal services in connection with the electric plant at Holyoke?

A. I could not answer that question, for I do not know.

Q. And the amounts paid out for boiler, liability and other insurance you took from the records of the Company, did you?

A. Yes, sir.

Q. In your statement? A. Yes, sir.

Mr. MATTHEWS. That was all gone into, Mr. Brooks.

Mr. BROOKS. I think it was, but I am not certain about it. Are you so certain that you would want to stand right up and swear to it?

The CHAIRMAN. Yes.

Mr. MATTHEWS. I am quite certain that that went in, Mr. Brooks.

Q. Did you obtain any information as to how much the Holyoke Water Power Company had spent for damage cases for the past twenty-five years for both plants? A. I took that matter up with the officers of the Company, and was informed —

Q. You gave it from what somebody has told you? A. Yes, sir.

Mr. BROOKS. Then I don't want to put it in.

Q. Mr. Chase, in his Table 1, part D, for the electric plant, I notice, allows for bad debts, and charges off \$345.26 for the bad debts? A. Yes, sir.

Q. Now should that have been done? A. Absolutely not, no, sir.

Q. Why not? A. Because there were no bad debts owing to the Company. That did not seem to be at all clear in the testimony, as will be found on pages 395 and 396 of Vol. IX.; and I have prepared a statement which I think will explain it to the Commissioners. As it was stated then, they didn't seem to understand it.

Q. Will you explain from that statement?

The CHAIRMAN. I understand Mr. Chase took his debts by an average. He didn't claim there were any bad debts to the Company.

Mr. BROOKS. Did your Honor understand it to appear that the amount returned by the Company was cash?

The CHAIRMAN. Yes, that is the way I recall it.

Mr. BROOKS. I understand it is a fact, and if you so understand it we will let it go. But if there is any doubt about it I should like to have him explain.

The CHAIRMAN. If there is any doubt about it, go ahead

Mr. MATTHEWS. I should like to have the stenographer read the last answer of the witness.

(Answer read by stenographer.)

By Mr. MATTHEWS.

Q. What does that mean, Mr. Foster? A. I mean on page 396 of Vol. IX. the Chairman stated, "Well, I understood it on the basis of the way he explained it yesterday, but to-day I don't know whether I do or not."

The CHAIRMAN. Isn't it a fact that Mr. Chase said that, taking the average of the companies, the bad debts would amount to so much, and it hasn't appeared that there were any bad debts in this particular year as against the Company? Now what are you asking him?

Mr. BROOKS. I thought it wouldn't do any harm.

By Mr. BROOKS.

Q. I will ask you what were the actual receipts and the amount that was credited as income? A. In the gas department they credit income with the amount of gas they sell or the bills they render. In the electric company they do not. Of course, they charge up on consumers' ledger the amount of the bills they send out, but they don't credit as income anything until they actually receive it over the counter in cash.

Q. So what they return as income was actual cash receipts?
A. Actual cash receipts.

Q. And therefore, you say, there should be no deduction on account of bad debts? A. Absolutely not. I will state further, in that connection, that any bills owing to the Company for electric light that are not collected are not carried on the books of the Company as an asset. If they were, Mr. Chase would be entirely right.

By Mr. MATTHEWS.

Q. Is that the case with the gas? A. No, it is different in the gas. They credit up their bills. That is the reason they make an allowance for bad debts in the gas.

By Mr. BROOKS.

Q. In your testimony of yesterday, Mr. Foster, you stated, in substance, that the matter of depreciation is only to be determined by a combination of the knowledge of a competent engineer, who should examine each plant in question; and his knowledge derived from said examination, in conjunction with that which the accountant should give, should be the determining factor in depreciation? A. Yes, sir.

Q. Just what do you mean by that? A. Well, I mean by that that the engineer, of course, is the only one who can determine the depreciation that should be written off. That has to depend entirely upon his physical examination, or should. Of course, in order to write off an amount of depreciation which the engineer might find, he has to have it stated on the books of the Company.

Q. I don't catch that. A. There must be stated on the books of the Company the correct amounts that have been charged up for construction. Now, in order to get at the correct amount for that, it is, of course, necessary for the accountant to go over the accounts, and see that no repair work has been charged to construction or that no construction work has been charged to repairs. The accountant's work is simply to state the construction and repair work accounts correctly. The engineer, of course, is bound to determine the amounts to be written off for depreciation.

Q. Then, for actual material depreciation of a particular plant, the book-keeper or accountant has nothing to do? A. Certainly, he couldn't know anything about it.

Cross examination by Mr. MATTHEWS.

Q. Mr. Foster, did you say that you were connected with some New York gas and electric light companies? A. I made examinations for some companies there.

Q. New York gas companies? A. Not gas companies; electrical.

Q. Where have you made examinations of large gas companies? A. Where have I made them?

Q. Where? Yes. A. Well, there is one in Elmira, N.Y.; one in Syracuse, N.Y.; three in Buffalo; one in Brooklyn; one in Newark, one in Trenton, one in Camden, N.J.; one in Norfolk, Va.; one in Wilmington, N.C.

Q. Those are large companies, all of them? A. They are not; no, not all large.

Q. I asked you what large companies, or I meant to. A. What do you mean by large?

Q. Selling a thousand million feet a year.

Mr. BROOKS. Do you mean larger than this?

Mr. MATTHEWS. I mean selling a thousand million feet a year.

The WITNESS. The Wilmington, N.C., and Norfolk, Va., companies are not as large as Holyoke.

Q. I ask, have you examined the books of any gas company where the company is as large as is represented by a thousand million feet of sales? A. I say that the Wilmington, N.C., and the Norfolk, Va., companies were not as large as Holyoke.

Q. Now that you have answered Mr. Brooks, will you answer my question? A. Well, I don't think there are more than two companies in the State that sell that quantity.

Q. What State? A. In this State, or in many other States.

Q. You haven't examined any in this State, have you? A. I am not at liberty to answer that question.

Q. Not at liberty to answer it? A. No.

By Mr. BROOKS.

Q. Is there any objection to your saying yes or no, Mr. Foster? A. I have examined them, but I can't say the companies.

Q. That is, you have examined companies in this State, but you don't care to disclose the names? A. Yes, sir.

By Mr. MATTHEWS.

Q. What I want to know now is, have you ever examined the books of any gas company doing a business as large as would be represented by a thousand million feet of gas in annual sales? A. I have.

Q. Where? A. I cannot state.

By Mr. BROOKS.

Q. Do you mean that you cannot state the place? A. I cannot state the place.

By Mr. MATTHEWS.

Q. How about Brooklyn? A. Brooklyn was some years ago. I don't remember.

Q. What company was it? A. Citizens' Gas Light.

Q. When was that examined? A. I should say it was four or five years ago.

Q. What was the size of that? A. I don't remember now, sir. It was a very large company.

Q. A thousand million a year, or five hundred million a year? A. Well, Mr. Matthews, I have examined probably a hundred different companies since then; and I don't remember the figures of that particular one.

Q. You said a moment ago that it was a very large company. What did you mean by that? A. I mean that it was a very large company, just exactly what I said. The sales I can't remember.

Q. Tell us approximately. A. I wouldn't state any figure now.

Q. Can't you tell us whether it was one-half of a thousand millions? A. I told you I couldn't state.

Q. What do you mean by very large? A. You can form your own judgment as to the Brooklyn.

Q. Did this company supply the whole city of Brooklyn? A. They did not, no, sir.

Q. How many companies are there in Brooklyn? A. I should say there were seven companies in Brooklyn.

Q. Did you ever examine any gas company's books in New York? A. I did not, no, sir.

Q. Or Buffalo? A. Yes, sir.

Q. How large are those companies? A. Well, Buffalo,— I ought to know about Buffalo, but I can't recall it at this moment. Well, I should say, as I remember it, about five hundred millions.

Q. In Buffalo. How long ago was it? A. Two or three months ago.

Q. Recently? A. Recently, yes, sir.

Q. Can you state, Mr. Foster, what in a large company, selling five hundred million feet of gas a year or more, was the percentage of operating expense to the gross income about the year 1897-98? A. I can't state, no, sir. I haven't the figures before me.

Q. Can you state the figures for Brooklyn or Buffalo? A. I have no figures before me, sir.

Q. Do you remember or know? A. I do not.

Q. Have you no knowledge on that subject, as to what a large gas company is operated for, in percentage of the gross? A. I shouldn't care to answer that question, because I haven't the figures before me.

Q. What experience have you had with the conduct or management or books of gas or electric light companies in Massachusetts, except your experience in connection with this Company? A. Do you mean in the matter of making examinations?

Q. What? A. Do you mean in the matter of making examinations?

Q. Of the books, yes. A. Well, I have had a good deal of experience.

Q. With what companies? A. I stated before that I am not at liberty to state.

Q. When did you have this experience? A. Within the last two years.

Q. With reference to gas companies or electric light companies? A. Gas companies.

Q. In Boston? A. I have told you I was not at liberty to state.

Q. Why not? A. Simply because negotiations are pending, and the results of my examinations are not known or disclosed.

Q. You have had no experience with electric light companies or with their books, in Massachusetts, except in connection with this case, have you? A. No, sir.

Q. You have had no experience in the examination of books of gas companies in Massachusetts, except in connection with this pending case and in the instance concerning which you decline to state the name of the company? Is that right? A. I should like to hear that question again.

(Question read by stenographer.)

The WITNESS. By pending case do you mean Holyoke?

Q. Yes, sir. A. No, I have not.

Q. What other experience have you had with the books of Massachusetts gas companies? A. I have had none.

Q. What? A. I have had none outside of the cases you mention:

Q. Then why shouldn't you have answered that question yes instead of no? A. Will you repeat it?

Q. You have had no experience in the examination of books of gas companies in Massachusetts, except in connection with this pending case and in the instance concerning which you decline to state the name of the company? Is that right? A. That is right, certainly.

Q. When do you say this examination was made that you don't care to disclose? A. Within the last two years.

Q. Within the last two years? A. Yes, sir.

Q. Has it been within the present year? A. That is as far as I wish to state.

Q. Was it since you gave your evidence before in this case? A. It was since I gave my first evidence.

Q. Since you were first on the witness stand in this case? A. Yes.

Q. Can you state, Mr. Foster, what the cost of manufacturing and distributing gas is, in the larger companies that you have mentioned, per 1,000 feet? A. I can't state offhand. I haven't the figures with me, but I could get them.

Q. What? A. I haven't the figures with me, but I could get them, I suppose.

Q. You can't tell us what the cost in Buffalo and Brooklyn was? A. I should say that I wouldn't mention the names and give the figures.

Q. You can't tell us now, because you haven't the figures here; and, if they were here, you wouldn't let us have them? A. I would tell you the cost, but I wouldn't pin it down to any one locality. These figures are obtained in an entirely confidential manner, and there is no reason why I should retail them out.

Q. Mr. Foster, your recastings, or recalculations, of Mr. Chase's Tables 11, 12, 13, 15, 16, 17, and 18 all relate to tables confined to gas and electric light companies operating in 35 communities? A. Yes, sir.

Q. 24 gas, 11 electric light, and 15 gas and electric companies? A. No; it is 15 gas, 11 electric, and 9 gas-electric.

Q. You are quite right. There are 35 companies operating in 24 communities? A. Yes, sir.

Q. And some of them doing an electric light business purely, some a gas business purely, and some a combined business? A. Yes, sir.

Q. Now all of your tables relate to Mr. Chase's tables founded upon the data for these 35 companies, except a few, do they not? I will ask you to state those of your tables that do not relate to tables by Mr. Chase founded upon the statistics for those 35 companies. A. My recast of — at least, my extension of Table 11, statements A, B, and C —

Q. Now wait one moment. Table 11 is a table —

Mr. BROOKS. Let him finish his answer.

Mr. MATTHEWS. No —

Mr. BROOKS. I submit he can, may it please your Honors.

The CHAIRMAN. Oh, well, Mr. Matthews is going forward all right.

Mr. MATTHEWS. I do not think the witness understands my question; that is the reason I have stopped him. If you want to have him go on and give a wrong answer on an erroneous assumption of what I asked him, he can do it.

Mr. BROOKS. I don't know whether it was erroneous. Well, never mind.

Q. Your recasting of Table 11 was one of the things I asked you to omit, Mr. Foster. I wish you would enumerate the tables which you have produced to-day which do not relate to any of Mr. Chase's tables founded upon an experience of these 35 companies. A. That is what I was starting to do.

Q. You were starting in to give your extension of Mr. Chase's Table 11. Does not that relate to Mr. Chase's Table 11? A. No, it does not; it relates to the balance of the State.

Q. Then I understand you. We are talking at cross purposes.

Mr. BROOKS. I think so, too.

Q. Give me the list of tables that you have prepared that have no reference whatever by extension or criticism or otherwise to any of Mr. Chase's tables founded upon the 35 companies. A. Oh, there are none. I have not attempted to make any at all.

Q. You talked through your examination, and counsel for the Holyoke Water Power Company did, about "Mr. Chase's cities," about "Mr. Chase's 15 gas companies, 11 electric light companies, and 9 companies doing combined business." Do you know where Mr. Chase got those companies, and why he took them? A. I certainly do not.

Q. You do not. Were you told by counsel when you prepared your tables that he had taken them from Mr. Prichard's list? A. Oh, of course, I knew from general knowledge that he took the tables Mr. Prichard used for different purposes.

Q. You knew Mr. Chase took the same cities and the same towns, if there were any, and the same companies which Mr. Prichard had used, did you not? A. I did.

Q. And you knew that Mr. Chase took the same companies that Mr. Nettleton had used, did you not? A. I don't know anything about Mr. Nettleton.

Q. Were you informed that Mr. Nettleton had prepared

tables showing the net earnings of various companies in the State, and that Mr. Chase had in selecting his 35 companies simply taken those which Mr. Nettleton had selected? A. I have never heard or never have seen any tables prepared by Mr. Nettleton.

Q. Your attention was never called to Mr. Nettleton's table, published in Vol. III.? A. I have never seen it, no, sir.

Q. Were you present when Mr. Prichard gave his testimony? A. I was not, no, sir.

Q. Has your attention been directed to the reasons that Mr. Prichard gave for his selecting these 35 corporations? A. I don't know that my attention has been specially directed to it. Of course, I —

Q. Do you know what his explanation was of his omission of the Boston companies from his table? A. I do not, no, sir.

Q. Do you know why he left out the small companies from his table? A. I do not.

Q. Do you know why or on what principle Mr. Prichard and Mr. Nettleton selected these 35 corporations? A. Why, I have a general idea, but no definite knowledge.

Q. Don't you know that he threw out the small companies, operating in towns of less than 20,000 people, say, and, on the other hand, threw out the big Boston companies, because he thought that neither extreme was fairly comparable with the Holyoke Company? Do you know that?

Mr. BROOKS. I object to that question, may it please your Honors.

The CHAIRMAN. On cross examination we allow it.

Mr. BROOKS. How can he know what a man thought?

The CHAIRMAN. I don't know.

Mr. MATTHEWS. It is what he said. Of course, I referred to what Mr. Prichard had said.

The CHAIRMAN. Go ahead, Mr. Matthews.

Q. What do you say to that question, Mr. Foster? A. Of course, I know it only of general knowledge that it has been discussed, and the mere fact that the extremes were left out I know. The reasons for it I don't know anything about. I have never read Mr. Prichard's testimony.

Q. You do not know, then, that Mr. Prichard said and explained to the Commission why he left out the extremes? A. I do not, no, sir.

Q. But you do know, do you not, that all that Mr. Prichard did in selecting these 35 companies was to leave out the extremes? A. I believe he did; I have never checked over the list with that in view.

Q. You were sufficiently familiar with the contents of the report of the Gas Commission for the year 1897-98 to know that Mr. Prichard's table includes every single gas or electric light company operating in Massachusetts, excepting the large Boston companies, on the one hand, and all companies operating in communities of less than a certain population at the other end? A. I do not; I have never investigated it at all, sir.

Q. You have yourself endeavored to supplement Mr. Chase's calculations founded upon Mr. Prichard's corporations by extending or amplifying Mr. Chase's tables, so as to include the corporations omitted by him, have you not? A. In some instances I have extended them to take in all the State.

Q. To take in all the State? Now, turning to page 82 of Vol. II., which contains Mr. Prichard's table, I notice that the smallest town or community has a population of 20,000.

Mr. GOULDING. Page 82?

Mr. MATTHEWS. 82; that is Mr. Prichard's original table. Mr. Nettleton's is found in Vol. III. somewhere.

Q. Now, Mr. Foster, is there any community in Massachusetts supplied with gas or electricity by a private corporation with a larger population than the lowest shown in Mr. Prichard's table; namely, Pittsfield, 20,000?

Mr. BROOKS. Read the question.

(The question was read.)

Mr. MATTHEWS. I mean, is there any community which is omitted from Mr. Prichard's table?

Mr. BROOKS. I did not understand the question.

Mr. MATTHEWS. I guess the witness does.

Q. Do you understand my question, Mr. Foster? A. I understand it all right.

Q. . Can you answer it? A. I don't know.

Q. Can you answer it by referring to the list that you have prepared of the omitted communities? A. I have not the population of those.

Q. Would you agree with Mr. Prichard's statement that it was fair for the purpose of comparing results in other communities with conditions in Holyoke to omit the large Boston companies, on the one hand, and on the other hand all the companies operating in communities with less than 20,000 people?

A. I certainly shouldn't agree with it.

By the CHAIRMAN.

Q. Should or shouldn't? A. Should not.

By Mr. MATTHEWS.

Q. If Mr. Prichard constructed this table by leaving out the Boston companies and the small companies, but no company in between, and taking in all the companies operating in communities of 20,000 or over, except Boston, for the sake of creating fair conditions of comparison, you would not agree that that was a proper course to pursue? A. For the purpose for which Mr. Prichard used his tables, I should agree; but, for the purpose for which they are used by Mr. Chase, I do not.

Q. What do you understand is the purpose for which Mr. Prichard used his table? A. Simply getting statistical data, but not in any way connected with the financial statement of the Company.

Q. What do you understand he did with his table after he got it?

Mr. BROOKS. How can that be competent?

The CHAIRMAN. Oh, I think on cross examination it is admissible.

Mr. BROOKS. I don't know what his understanding —

The CHAIRMAN. He said he had some understanding of it.

Mr. MATTHEWS. If he had not volunteered that statement, I should not have asked him anything about it.

Q. Now, Mr. Witness, what do you understand was Mr.

Prichard's purpose in constructing this table on page 82 of Vol. II.? A. I understand his use of that table was confined to computing per capita sales of gas and electricity, and, in the case of gas, the consumption of gas per capita.

Q. What was the next step? He didn't stop there, did he?

A. I don't know anything about that.

Q. You don't know what he did after he got this average per capita consumption? A. I told you I didn't know anything about Mr. Prichard's testimony, because I haven't read it.

Q. Then you want to leave it this way: that you understand that all the use that Mr. Prichard made of that table was simply to get at the per capita consumption of gas and electricity respectively, and stop right there, do you? A. No, I have a general knowledge that he used that to — the results that he obtained — to get at, as I believe, the gross income from the companies.

Q. And didn't he go a step further, and by means of those data get at the net income of the companies? A. That I couldn't state, sir; I don't know.

Q. Didn't he use this table on page 82 of Vol. II. as a stepping-stone toward estimating the net income of these various companies in Massachusetts, and also as a step in estimating what the net income of the Holyoke Gas and Electric Light plant ought to be?

Mr. BROOKS. I submit, may it please your Honors, with all due deference, that this cannot be competent. How can this man be asked what Mr. Prichard testified to or what he did with his table?

Mr. MATTHEWS. I am asking his understanding.

Mr. BROOKS. It cannot have any competency here.

The CHAIRMAN. We think he can go forward as far as he knows.

Mr. MATTHEWS. Certainly, so far as he knows.

Mr. BROOKS. He is asking for his understanding. He has said again and again that he does not know; he has not read it.

The CHAIRMAN. If he will say he does not know, that will end it.

Mr. MATTHEWS. Yes, if he will say that. On the other hand, he has already said that he knows, and that Mr. Prichard used these statistics for a proper purpose and Mr. Chase for an improper purpose.

Mr. BROOKS. He never said he knew.

Mr. GOULDING. I do not understand that he has characterized Mr. Chase's use of them in any way.

Mr. MATTHEWS. He said it was proper to use the statistics in the form that Mr. Prichard did, and not in the form that Mr. Chase did. He having stated that, I am entitled to inquire what he knows or what he assumes to be Mr. Prichard's method.

The CHAIRMAN. Go ahead.

(Question read.)

A. It is quite possible he did ; I don't know.

Q. You don't know, then, whether he made use of this table for that purpose or not? A. If you will let me state, I will tell you the reason I made that statement a moment ago.

Q. No, I want you to answer me this question.

The CHAIRMAN. If he does not know, how can he?

Mr. MATTHEWS. I am trying to see whether he does or not.

(Question read.)

Q. What do you say to that? A. I do not.

Q. Has your attention ever been called to the calculations of Mr. Nettleton upon page 59 of Vol. III.?

Mr. BROOKS. He said it had not.

A. No.

Q. You never saw his table? A. No, sir.

Q. And you do not know that he used these same 35 corporations selected by Mr. Prichard for the purpose of getting at the net income thereof? A. I don't know a thing about it.

Q. And of applying that result to Holyoke? A. I never have seen it at all.

Q. Are you familiar, Mr. Foster, with the rulings of the Gas Commissioners on the subject of the depreciation? A. I can't say that I am. I suppose you mean of Massachusetts.

Q. I mean here, certainly. A. I cannot say that I am.

Q. Do you know that it is the practice of the Gas Commission to compel gas and electric light companies in Massachusetts to lay aside large sums occasionally for depreciation?

Mr. BROOKS. I object.

The CHAIRMAN. Does that appear in their reports, the returns that have already been submitted?

Mr. MATTHEWS. I am asking the witness. Yes, the facts appear in the annual reports of the Gas Commission. My question is whether the witness—

The CHAIRMAN. Are you familiar with that, Mr. Witness? Do you know whether they do or not?

The WITNESS. I am not.

Q. I understand you to say that you do not know what the practice of the Gas Commission in that regard is? A. I don't know of any special rule in connection with it.

Q. Well, I don't ask you that. Do you know what the decisions and practice and action of the Gas Commission have been with reference to the amounts to be written off for depreciation by the various gas and electric light companies of this State?

Mr. GOULDING. I object, on the ground that it is immaterial whether he knows it or not.

The CHAIRMAN. Let us find out whether he knows it.

The WITNESS. Well, I do not know, no, sir.

Q. You do not know, then, that the Gas Commissioners in some cases that you have referred to in your direct examination have compelled these corporations to charge or write off large sums occasionally for depreciation?

Mr. BROOKS. I object. He has said that he did not know.

Mr. MATTHEWS. He said he did not know generally. I am asking him particularly about the instances that he has referred to.

The CHAIRMAN. Do you know anything about it?

A. I do not know—I have not gone behind the Gas Commissioners' report. There is nothing in there that will state. As far as I have seen, they do not state that fact.

Q. You have not found anything in the Gas Commissioners' reports to indicate that they compelled companies occasionally to charge up large sums for depreciation?

Mr. BROOKS. I object to that.

The CHAIRMAN. Let us see whether he has or not. There is no harm in that. What do you say?

The WITNESS. I have not seen any such thing in the Gas Commissioners' report.

Q. The question is this,—whether you have not seen anything in the Gas Commissioners' report to indicate that that board has occasionally compelled the very companies that you have been referring to in your direct examination to charge or write off large sums for depreciation?

Mr. BROOKS. We object to the question.

The WITNESS. I don't know of any reason—

The CHAIRMAN. He asks you whether it is charged.

The WITNESS. I have not seen anything of the nature that you inquire about.

Q. In the annual reports of the Gas Commissioners? A. No, sir.

Q. In regard to these items which Mr. Chase called depreciation and which you do not, have you got a list of them? A. I have not got a special list, no, sir.

Q. You read off one by one, and I supposed you had a list of them. A. Well, I don't know whether it is complete or not. I think you will find them in my recast of Mr. Chase's tables.

Q. Do I understand that the last column of your reconstruction of section A, Table 11, contains a specification of the items which Mr. Chase considered as depreciation charges, and which you do not? A. Well, not wholly. The \$15,000 I have left as depreciation.

Q. Which \$15,000? A. The first notation there.

Q. That is in the case of the Malden company? A. Yes.

Q. The \$15,073.75 you and Mr. Chase both took as depreciation? A. I allowed it to remain as depreciation.

Q. Did you leave out the \$20,697.51 charged to what is called "extension reserve" by the Springfield Gas Company?

A. Yes.

Q. And also the \$1,758.35 "construction" charged off by the Worcester Gas Light Company? A. By the Taunton.

Q. Now, to take up one of these items, for illustration, I will call your attention to the case of the Springfield Gas Light Company and its accounts, as set forth in the report of the Gas Commission for the year 1897-98, wherein I see charged profit and loss — A. Yes, sir.

Mr. GOULDING. What volume do you refer to now?

Mr. MATTHEWS. I don't know what report.

Mr. BROOKS. Of the Gas Commissioners' report.

Q. — Charged to profit and loss, the item \$20,697.51, to what is called "extension reserve." A. It is charged to profit and loss and credited to extension reserve.

Q. Yes. Charged to profit and loss and credited to "extension reserve." Now the account "extension reserve" itself is found in the liabilities of the Company, is it not?

A. It is, yes, sir.

Q. You don't find any such account in the assets of the corporation, do you? A. I do not, no, sir.

Q. Doesn't that indicate to your mind that there is no separate fund kept by the Springfield Gas Light Company amounting to \$103,685.48 under the title of "extension reserve"? A. I should like to have that question read.

(Question read.)

Q. When I say separate fund, I mean actual assets, in property or cash. A. Available for that purpose only?

Q. Yes, sir. A. No, sir, there certainly is not.

Mr. GOULDING. Does that mean it shows there is no asset in the Company?

The WITNESS. There is no asset shown on the Company's books.

Q. No specific asset, available for that purpose alone.

Mr. GOULDING. It don't show, does it, that there is no asset?

Mr. MATTHEWS. No, it shows there is no asset for that special purpose.

The WITNESS. For that special purpose.

Q. Now the total amount of cash on hand at that time was only \$17,250? A. It is so reported.

Q. And the total amount of notes receivable in the assets of the Company at that time is only \$98.11? A. That is all it is.

Q. And all the rest of its assets consist of manufacturing property and a small amount of accounts receivable, or current accounts, do they not? A. It so appears.

Q. Now this "extension reserve" fund appears in the liabilities of the Company, but not in the assets? A. At \$103,685.48, yes, sir.

Q. And it was to that fund, making up a part of the \$103,685.48, that the charge to profit and loss that year of \$20,697.51 was credited? A. That account was credited, yes, sir.

Q. The \$20,697.51 charged to profit and loss and credited to the "extension reserve" that year is part of the \$103,685.48? A. Yes.

Q. Which is the total "extension reserve" as appears in the liabilities? A. I presume so, yes, sir.

Q. That is it, yes. Now, Mr. Foster, doesn't that indicate to you that this \$103,685.48 of so-called "extension reserve" is a writing off of the assets of the Company?

Mr. BROOKS. I did not catch that.

(Question read.)

Q. To that amount, or by that amount? A. Well, I don't care to make any presumption in the case.

Q. Well, it isn't carried as a separate fund among the assets, is it? A. The annual amount is not specially stated in the assets applicable to that particular purpose.

Q. So far as this is a separate fund at all, it appears upon the books of the Company only, doesn't it? It is a book entry rather than one separate fund? A. It certainly so appears.

Q. Now, then, does not the existence of this book item on the liability side of the ledger, called "extension reserve,"—the \$103,684.48,—operate to reduce the book value of the Company's assets beyond what they would otherwise be? A. It certainly does not.

Q. Why not? A. For the simple reason that it is simply an amount taken out for purposes of the Company which I know nothing about, from their so-called surplus.

Q. It would be written off for some purposes you don't know about? A. I beg your pardon. Not written off, but just taken out of the surplus, and put in another name, somewhere else.

Q. Yes, it would be surplus if it was there. A. It was just returned to the account from which they took it; it was transferred.

Q. That is to say, it might have been profit and loss? A. Practically, yes. It practically is profit and loss until it is differently applied.

Q. And the same is true of any similar fund not represented by any particular property in the assets? A. It certainly is.

Q. It is true of the "depreciation" accounts? A. Unless there is a special amount set aside to take care of that account in the assets.

Q. Unless there is a separate fund in property or securities? A. Or securities.

Q. That is to say, wherever there are no securities or property of any kind or cash set aside and kept as a separate fund, then any of these entries, "extension reserve," "depreciation," "depreciation fund," or the like, might just as well be in profit and loss? A. Absolutely book entries.

Q. Depreciation is often reckoned as part of the operating expense of a gas or electric light company, isn't it, and charged up that way? A. Never, that I know of.

Q. Are you familiar with the practice of railroads and street railways? A. Quite so, yes, sir.

Q. How is it with them? A. Depreciation is not so considered in operating expenses.

Q. What do they do with it? A. Sir?

Q. What do they do with it? A. Well, it is an amount, of course, that comes eventually out of the earnings, eventually out of the expenses, but it is not so classified in the items that are called operating expenses.

Q. Does it mean anything more than this,—that the word “depreciation” does not appear in the accounts of street railway companies as they are usually kept? A. I don’t think it does.

Q. There is an operating expense account, and everything is charged to that? A. There is an income, the several subdivisions of operating expense accounts, and then a separate amount is stated as the net income,—the income over expenses; and then from that item eventually, of course, allowance is made for depreciation, but it is not classed so.

Q. Are you familiar with the manner in which the accounts of street railway companies in Massachusetts are commonly kept? A. I am not familiar with street railway companies in Massachusetts.

Q. You don’t know, then, that depreciation, with the exception of one company, is treated as part of the operating expense of street railways? A. Not in Massachusetts, no, sir.

Q. Do you mean to say you are not, or you don’t know? A. I don’t know.

Q. Now, of course, depreciation, in the long run, has got to come out of the earnings, you said a moment ago? A. Certainly.

Q. It has got to come out in the end, but it isn’t necessary that so much be set aside each year? A. I didn’t say it was not necessary.

Q. Is it? I am asking you. Is it necessary that so much be set aside on the books each year, and year after year, for depreciation? A. That would depend entirely upon how the regular expenses of the Company are treated, in their expenditures for repairs, expenditures for new work —

Q. Let me ask you this question. If the accounts are kept

by charging to operating expense simply repairs and renewals, and not depreciation, is it absolutely necessary, as a matter of book-keeping, to charge up something for depreciation each and every year? A. Well, it certainly isn't absolutely necessary.

Q. But it is a better plan to do it? A. It is certainly a safer plan.

Q. You would call it the correct plan, I suppose? A. Just one minute,—let me qualify that answer. Do you mean to say that a certain sum should be written off, set aside on the books of the Company, as applicable to future or past depreciation? Is that what I understand your question to be?

Q. Suppose you assume that it means that. We will go on the assumption that it means that, Mr. Foster, and what would your answer be? A. I should still say that I think it would be advisable for the depreciation to be taken year by year, but in the manner in which I spoke of in the examination.

Q. You mean so much each year? A. I mean by the getting together of the engineer and accountant, and treating the depreciation in the proper manner.

Q. That isn't exactly responsive, but let it stand. What I am trying to get at is simply whether you think it is better practice that something figured out in the proper way should be charged up each year for depreciation? A. I don't think there is any question about that.

Q. I understood you to say that it was not absolutely necessary that it should be done each year. A. When I say it is not absolutely necessary, I mean simply as you put the question, as I understand it. It is not necessary from a book-keeping standpoint.

Q. It is not necessary from a book-keeping standpoint that it should be done each and every year, is it? A. If you want to get at the yearly results of a business, I should say it would be.

Q. To keep a company out of insolvency, to keep a company running prosperously, and to continue the dividends, is it absolutely necessary that something should be set off each and

every year for depreciation, or can the depreciation charges be made occasionally, at longer or shorter intervals of time?

A. There is too much in your question for me to answer.

Q. Perhaps it is too long. I understood you to say it was not absolutely necessary that something be set aside each and every year for depreciation, except for the purpose of knowing the depreciation for that year? A. What the results of the business are for that year.

Q. Now do you know that it has been the practice for years in Massachusetts for gas and electric light companies to charge up lump sums for depreciation every few years, and not to charge off regular or any amounts each and every year? A. I certainly don't know of any such rule, but I know it has been the practice.

By Mr. BROOKS.

Q. Judging from what? A. From the Gas Commissioners' reports only.

By Mr. MATTHEWS.

Q. Do you know further that the depreciation charges have increased during the past few years, both in the case of gas and electric light companies, owing to the action of the Board of Gas and Electric Light Commissioners? A. I don't know any such reason.

Q. Any such what? A. I don't know that.

Q. You haven't gathered that from the reports of the Gas Commissioners? A. I never looked at them for that purpose.

Q. Now, Mr. Foster, suppose you found a gas company with an income of \$50,000, and a charge-off in that year of \$50,000, what would that indicate to your mind? A. What kind of a charge-off do you refer to?

Q. For depreciation. A. It would mean just what it states, that they charged off \$50,000 for depreciation.

Q. It wouldn't necessarily mean that the \$50,000 charged off for depreciation had come from the income, would it? A. It can't come from any other place.

Q. It might have come from profit and loss? A. That is the direct result of income.

Q. It might, as a matter of fact, have come either from income or from profit and loss, or from both? A. Either from income for that year—

Q. Either from income or from profit and loss, or from both? A. Certainly.

Q. In other words, the depreciation charged isn't necessarily a charge upon the income of the Company for the year in which it is made? That is true, isn't it? A. It certainly can't be so considered in some of the reports we looked over.

Q. Suppose you find a gas company that has charged \$50,000 in one year and nothing for the preceding four years, how does the practice of that company differ from that of a corporation which charged off \$10,000 each year for the same purpose?

Mr. GOULDING. We object to the question. It might be a question of difference in depreciation. The depreciation might have occurred within that year, as far as possibilities are concerned; and I submit that his speculation and opinions about it are not competent evidence. He hasn't undertaken to construe anything in the Commissioners' reports. He has simply taken them as they were.

The CHAIRMAN. The question is admitted.

The WITNESS. Without knowing anything about the local conditions between the two, of course, in the five years it would operate in the same manner.

Q. Mr. Foster, did I understand you correctly yesterday in saying that depreciation depends in part on the improvement, if any, in business conditions? A. No, I didn't so state.

Q. That is the way I took it down. I thought you would like to explain that. A. I stated that very often the improvement in local conditions will influence the judgment of the engineer in stating what amounts he wishes written off as depreciation from the books.

Q. Well, what do you mean in that answer by "improvement in local conditions"? A. I don't know exactly how to frame the answer. It is more of an engineering proposition than it is one of accounting.

Mr. BROOKS. Frame it the best way you can, and let it go at that.

Q. How can improvement in local conditions affect depreciation in the plant? A. By increasing the possibilities of doing business.

Q. That is, by increasing the earnings? A. Earnings, sales, output of the Company, making a plant more valuable for its uses. Those conditions, I know from practical experience, the engineers do take into consideration; but, as I said, it is more of an engineering subject than it is one of accounting. By working with engineers, I know that they do take those things into consideration.

Q. Then, so far as your knowledge of this subject of depreciation goes, it depends to a certain extent upon business conditions and earning capacity? A. As far as business conditions go, it depends entirely upon the engineer's opinion.

Q. But you say that, so far as your knowledge and experience go, it depends in part upon business conditions or prospect of future earnings? A. I know that that circumstance does influence the engineers' opinion,—their findings.

Q. And your knowledge of the subject of depreciation is dependent upon such opinions as these, expressed by engineers? A. Absolutely, subject to the findings of the engineers.

Q. Mr. Chase excludes and you include in gross income for the gas and electric light corporations what is called in the Gas Commissioners' reports, "Income from other sources,"—that is so, isn't it? A. Yes, sir.

Q. Do I understand you to say that that "income from other sources," so-called, might include rents or receipts from property? A. Well, which "income from other sources" credit do you refer to? There are two.

Q. Gas or electric? A. No, there are two in the gas; there are two such accounts in each company.

By the CHAIRMAN.

Q. You named them yesterday. What are they? What do you call them? A. I asked him which he referred to.

Q. I understand that; what are they? A. One is income derived from the sale of certain materials.

Q. Coal? A. Coal, and one thing and another.

The CHAIRMAN. Now I remember.

The WITNESS. Which the Commissioners state must be applied to the manufacturing income, and others which they state must not be so applied.

By Mr. MATTHEWS.

Q. What is the first case? Let us see whether that is so or not. Take Brockton,—Brockton Gas Light Company. (Showing book to witness.) Where do you find in the accounts of Brockton, for instance, two kinds of income from other sources? Look at page 21 of the report of the Gas Commission for 1897-98. I only see one for gas and one for electric. A. Well, the fourth line under "Manufacturing account" states—

Mr. BROOKS. What book? You had better get it into the record what book you are referring to.

Mr. MATTHEWS. It is all there in my question.

The WITNESS. In the Gas Commissioners' report for the year ending June 30, 1899, on page 21 of Appendix A, the fourth line under "Manufacturing account" states "income from other sources" to be \$190.88, applicable to manufacturing account.

Q. You do not find the words "applicable to manufacturing account" in the report, do you? A. Why, certainly. It is so stated. That is the manufacturing account.

Q. You do not find the word "applicable," do you? A. No.

Q. You find simply an account headed "Manufacturing account"? A. Yes, sir.

Q. And in that you find certain items of income? A. Yes, sir.

Q. Including one entitled "Income from other sources"? A. Yes.

Q. Do you assume that that \$190.88, or the corresponding

item in other cases, is always an income or return from the manufacturing business of the Company, and not from any other source, such as rents, securities, interest, etc.? A. I do not assume anything. The Gas Commissioners — I know it to be the general practice; and the Gas Commissioner, Mr. Barker, stated to me that that was the intent of the report sent out by the Commissioners. Whether the companies adhere to the intent of the Gas Commissioners, of course, I do not know; but I have to take the report as I find it, assuming that the conditions are followed out.

Q. Well, now I understand that that \$190.88 was included by you as income and excluded by Mr. Chase? A. Yes, sir.

Q. And that is so of all corresponding items? A. Yes, sir.

Q. But you cannot tell what they really represent, except as stated here, "Income from other sources"? A. Except as stated there?

Q. Except as stated in the reports, "Income from other sources"? A. That does not go quite far enough.

Q. Exactly, but is there anything in this report that enables you to go further and tell what that \$190.88 was derived from? A. Not derived from, but the Commissioners state in their report that it is applicable to the manufacturing account, because they keep these accounts entirely separate from all the other business.

Q. That is the inference which you draw? A. There is no inference about it. It is stated there in black and white.

Q. Well, it is credited. That is what you mean, isn't it? A. No, not at all. It is included in the manufacturing account.

Q. It is included by being credited, isn't it? A. How else could it be credited?

Q. You keep using the word "applicable." You don't find that word there, do you? A. It is in the manufacturing account. That account the Commissioners keep separate and distinct for manufacturing account.

Q. You infer that from what Mr. Barker told you or

from what appears in the reports? A. It is right in front of you. It can't be anything else.

Q. Now have you a list of those items,— what they aggregate? A. Well, I have testified to the difference once, I believe.

Q. They amount to a very small fraction of 1 per cent., don't they? A. In some cases they do.

Q. Take the case of the gas companies, for instance, in your second large sheet. Your total income— A. The difference is about \$1,500, I believe.

Q. The difference is \$1,500 out of \$747,500, isn't it? A. Yes.

Q. That is all?

The CHAIRMAN. You had better not quarrel over that, then.

Mr. MATTHEWS. I don't know which is right, but that is all the difference there is in this particular part of the case.

The CHAIRMAN. Yes.

Q. Have you anywhere figured up what the depreciation would be on Mr. Chase's theory, taking in the omitted item of Waltham? Does that appear in your tables? A. What the depreciation would be?

Q. For the 11 companies, isn't it? Waltham is gas, isn't it? A. Gas-electric.

The CHAIRMAN. It is on the table, isn't it?

Mr. MATTHEWS. It is on the table this way. (To witness.) You have taken the Waltham depreciation into account, but you have left out the other items which you thought Mr. Chase improperly included as depreciation charges?

The WITNESS. Yes.

Q. You have not anywhere, have you, a table made up exactly on Mr. Chase's theory including these items which you exclude and also the Waltham item? A. No, except in a foot-note.

Q. Have you it in a foot-note? I thought you had something of the kind. Where is it? A. Second line.

Q. That is made up on your theory?

By the CHAIRMAN.

Q. You have not made one up on his theory? A. No, it is left out.

Mr. BROOKS. We submit it is, your Honor, made up on Mr. Chase's theory.

Mr. MATTHEWS. There is no use quibbling over words.

Mr. BROOKS. The Chairman said it was not.

Mr. MATTHEWS. I just want to get it straight. The witness has put in his reconstructed Table 11, C, this foot-note:

"Divisible income, not including interest charges or Waltham depreciation, = \$381,615.90 = 26.9 per cent. of income from sales."

Q. Do you mean to say that that is the gross income after deducting operating expenses and depreciation, including Waltham depreciation? A. Yes, not deducting the Waltham. Here, you see, I have deducted Waltham depreciation.

Q. This is not deducting Waltham? A. This is not deducting Waltham.

Q. Now my question is this: Have you stated anywhere in these tables what section C of Mr. Chase's Table 11 would be, if you had assumed as depreciation everything that he took as depreciation, and also included the Waltham item? A. No, I do not so state it.

Q. You could not do that offhand, could you? A. I could very easily.

The CHAIRMAN. Any one could do it.

Mr. MATTHEWS. Any one can do it, but in your direct examination I was not sure whether you had done it or not.

Q. You said that you left out Holyoke from your tables; that is so, isn't it? A. Yes, sir.

Q. Why did you do that? A. Simply because the comparisons were being made with regard to Holyoke.

Q. That is to say, if you are comparing a lot of other cases with Holyoke, you would not include Holyoke in both sides of the comparison? A. No, sir, not at all.

Q. You would consider it proper to exclude Holyoke from the first list? A. I certainly should.

Mr. MATTHEWS. Mr. Brooks, do I understand that you are going to show from some other witness what the Company has paid for damages?

Mr. BROOKS. Yes, sir.

Mr. MATTHEWS. Then I will not ask this witness anything about that matter on that understanding.

Mr. BROOKS. He cannot tell.

Mr. MATTHEWS. He did say something about it.

Mr. BROOKS. Well, then I stopped. I had the question stricken out. He said he had learned it from what somebody told him, so I am going to have the somebody that told him.

Q. Mr. Foster, you say that there should be no allowance for bad debts for the electric light plant, but should be one for the gas plant in figuring out the income? A. Yes, sir.

Q. That is because, as I understand you, the gross income in the case of the electric light plant represents absolute cash receipts and not book sales? A. Not book sales.

Q. But in the case of gas plant the gross income represents book sales, so-called,—bills receivable? A. Bills receivable.

Q. Do you know what the practice is generally with electric light companies throughout the State in their accounts as published by the Gas Commission? A. What their practice is?

Q. Yes, whether the gross income represents sales, as in the case of gas, or actual receipts, as in your case? A. Well, I really don't know.

Q. Have you examined the blank forms of returns which the Gas Commission published to be filled up by the companies? A. Yes, sir.

Q. Does not that form indicate that the gross income for electrical companies is to be made up in the same way as the gross income for the gas companies? A. I think it does, as far as my recollection goes. I can tell you in a second. (Examining blank form of return.) It does, yes, sir.

Q. That is to say, the Gas Commission intends that the companies shall return, both for electrical companies and for

the gas business, the gross income as represented by the accounts receivable? A. I should so presume.

Q. And you find an item of "bad debts," don't you, both for the electric and the gas, in the blank forms? A. A provision for it.

Q. A provision? A. Yes, sir.

Q. A blank space for it? A. Yes, sir.

Q. Entitled "bad debts"? A. Yes, sir.

Q. If, in the particular case of your company, the income on the electric light side of its business represents cash receipts rather than book accounts, that would be a departure from what you understand to be the practice intended by the Gas Commission, would it not? A. A departure from the practice that is apparent from the returns,— what they apparently desire from the returns.

By Mr. BROOKS.

Q. What who apparently desire from the returns? A. The Gas Commissioners.

Q. You mean from the blank form of returns? A. From the blank form.

Mr. BROOKS. Not from the returns?

Mr. MATTHEWS. Yes.

By Mr. MATTHEWS.

Q. Now turn to the second short table in your schedule. I notice that the Boston gas companies, which you have put at the bottom of that page,— Bay State, Boston, Dorchester, and Roxbury,— have no depreciation charges at all? A. Yes, sir.

Q. That does not indicate to your mind that there was no depreciation, of course? A. I am not assuming anything. I am taking the books as I find them.

Q. Did you look through prior years to ascertain whether those four Boston companies had made any charge for depreciation? A. I had no reason to do so, sir.

Q. Well, I am just asking you whether you did or not? A. I don't think I did.

Q. Don't you know, as a matter of fact, that the four Bos-

ton gas companies which are in the Bay State Gas Trust, so-called, keep their books in such a manner that they make no depreciation charges? A. I could not determine that from the Gas Commissioners' reports.

Q. You could, if you took a series of them, couldn't you?
A. Not necessarily, no, sir.

Q. That trust was organized in 1889. Now, if you took all the reports from 1889 to date, and found that there were no depreciation charges whatever in the four companies owned by the Mercantile Trust Company of New York, you would be apt to infer, wouldn't you, that they were taking care of depreciation in some other way than by making nominal charges to that account? A. That would be the natural inference, but, not knowing the facts, I would not state.

Q. I call your attention to the Brookline Gas Light Company. Now there is a depreciation in your table against the Brookline Gas Light Company of only \$483.83, a nominal amount? A. Yes, sir.

Q. Have you made any such inquiry respecting the management of that corporation since it has been owned in New York? A. I am not taking any other period in question except the one used in this table.

Q. You do not know, then, that since the Brookline company has become the property of the New England Gas and Coke Company it is managed in the same way as the others in respect to depreciation? A. I have no such knowledge in regard to it.

Q. You know that those four companies, the Bay State companies first mentioned, and the Brookline Gas Light Company, are owned by persons or corporations who reside in New York or Philadelphia? A. I have no means of knowing it from the Gas Commissioners' reports.

Q. Do you happen to know it as a matter of fact?

Mr. BROOKS. How can he know? He cannot know, can he?

Mr. MATTHEWS. He might. I am asking.

The CHAIRMAN. He does not know, anyway.

The WITNESS. I don't think that has anything to do with the case.

Q. Well, you know that the four Boston companies, the Boston, Bay State, Roxbury, and South Boston, are owned by the Mercantile Trust Company of New York, do you not,—that that corporation owns all the stock? A. I do not know it, no, sir.

Q. You say you do not gather that from the reports of the Gas Commission? A. No, sir.

Q. Are you aware that the Gas Commission has recently, in one of the reports, published a long and careful statement of the ownership of those companies? A. I have not had a chance to read the recent reports.

Q. And do you know that the majority of the trustees of the New England Gas and Coke Company, which owns the Brookline Gas Light Company, reside in New York and Philadelphia? A. I do not know anything about it, sir.

Mr. MATTHEWS. I do not think of anything more, Mr. Brooks.

By Mr. BROOKS.

Q. Mr. Foster, just a moment. With regard to the credit to extension reserve fund of \$20,697 at Springfield, is there any way of determining from the Gas Commissioners' reports whether or not that sum was actually invested in extensions that year? A. Certainly not.

Mr. BROOKS. That is all I care to ask.

By Mr. MATTHEWS.

Q. Excuse me one moment. Just one question, to be sure that I understood you. In discussing Mr. Chase's section D of Table 3, which is a criticism of Mr. Wright's sinking-fund theory, I understood you to say that Mr. Chase, while he headed one of his columns as "Simple interest," did not, as a matter of fact, strike interest at all on the items underneath that heading? A. Yes.

Q. That is so, is it? A. Yes.

Q. Then you would infer that the head-note in that column was an error? A. That would be an assumption.

Q. Well, it would not be descriptive of his process, would it? A. Not of his process, no.

Q. Were you present when he explained what he meant by interest? A. I think I was.

Q. Well, do you remember his explanation? A. I got a general idea, but I don't know what it is absolutely.

The CHAIRMAN. I understand we go on at Boston at ten o'clock on Monday.

(Adjourned to meet in Boston, Monday, May 6, 1901, at 10 A.M.)

(Hearing subsequently postponed to Tuesday, May 7.)

SEVENTY-FIFTH HEARING.

BOSTON, Tuesday, May 7, 1901.

The Commissioners met at the Court House at 10 A.M.

Mr. BROOKS. I would like to have you get Mr. Ridlon; there are a few questions I desire to ask him. Can you get him here to-day or to-morrow?

Mr. GREEN. Well, I will see. I will find out if I can get him.

Mr. BROOKS. When are you going to take up the question of some of that evidence that you offered which was not admitted, Mr. Green?

Mr. GREEN. What evidence is that?

Mr. MATTHEWS. Some suspended papers?

Mr. BROOKS. Yes.

The CHAIRMAN. I thought they were all disposed of.

Mr. BROOKS. Your Honor recalls that there were two or three different questions reserved at Springfield to be considered in Boston.

The CHAIRMAN. I have forgotten about them. I haven't them in my mind.

Mr. BROOKS. What do you say, Mr. Matthews?

Mr. MATTHEWS. We haven't anything this morning to discuss.

Mr. BROOKS. We have something that we wish to put in, if it is admitted.

The CHAIRMAN. What is it, Mr. Brooks?

Mr. MATTHEWS. Can't you proceed with something else?

Mr. BROOKS. Yes. Mr. Green, will you take the stand, please?

SAMUEL M. GREEN, *recalled*.

Direct examination by Mr. BROOKS.

Q. Mr. Green, whether or not there is any difficulty, any practical difficulty, at Holyoke in obtaining men for such restricted days as the Water Power Company names for the running of the steam plant, and at the usual prices?

Mr. MATTHEWS. I object.

The CHAIRMAN. To obtain men, you say?

Mr. BROOKS. Yes.

The CHAIRMAN. Of course, on this question of rebuttal, I don't suppose you want to make, excepting in some special instance, any elaborate argument?

Mr. MATTHEWS. My objection is general, that that is proper in chief, if at all, and not in rebuttal.

The CHAIRMAN. I do not know of any evidence which it meets; but, if it becomes essential, let us have it.

Mr. BROOKS. Of course, we would not introduce it if we did not think it met some evidence.

Q. What do you say about that, Mr. Green? A. There isn't any difficulty.

Q. And whether or not the various prices that you gave in your direct examination, and which appear in your schedule, were prices that you derived from your own experience in Holyoke?

Mr. MATTHEWS. Don't you think that is rather leading, Brother Brooks?

Mr. BROOKS. Well, I guess it is.

Q. How did you derive the prices that you named in your schedule for the various classes of work?

The CHAIRMAN. Didn't he state that originally?

Mr. BROOKS. I think not, as we ran over it.

The CHAIRMAN. State it, Mr. Green.

A. From my actual experience of similar work done in Holyoke.

Q. Have you made any examination of any of the prices

that have been given here by any of the witnesses for the defence? A. Yes, sir.

Q. Mr. Main's, for instance? Have you made an examination of that? A. Yes, sir.

The CHAIRMAN. Any of the prices of what?

Mr. BROOKS. Any of the prices.

Mr. MATTHEWS. Materials, you mean?

Mr. BROOKS. Yes, prices of material and the labor for excavation,—things of that kind.

The CHAIRMAN. You have already put in on your side as to that, unless I forget; you have already put in the cost of excavation.

Mr. BROOKS. Yes. Well, I purpose through Mr. Green to take Mr. Main's prices and criticise them, and show by Mr. Green that it would be impossible in the city of Holyoke, at the going rate of wages there and the going rate of material, to do what Mr. Main says.

Mr. MATTHEWS. Is this the buildings?

Mr. BROOKS. Yes, and various things; more especially the hydraulic plant.

Mr. MATTHEWS. Now, if your Honors please, every witness put on for the Company in chief testified to the cost of construction, including quantities, prices, and resulting values.

The CHAIRMAN. And in detail.

Mr. MATTHEWS. And in detail, every one of them.

The CHAIRMAN. Point out special instances, Mr. Brooks, and call our attention to those.

Mr. BROOKS. I was intending to. I was going to take, for instance, the excavation, the price of excavation at the head gates, which Mr. Main gives at 30 cents.

The CHAIRMAN. Your witnesses gave it at a higher price.

Mr. BROOKS. Yes, sir. I purpose to show by him, if I am permitted, and it seems to me it is legitimate rebuttal, that it is impossible in Holyoke, at the going prices as of 1898, to have accomplished what Mr. Main says he could accomplish at the price he could have accomplished it.

The CHAIRMAN. I think you can show by the witness the going prices at Holyoke in 1898.

Mr. MATTHEWS. I think that has been shown ; at least, an attempt has been made to show it by the Company from several witnesses.

The CHAIRMAN. Perhaps so. Of course, I cannot carry all that. You can show the going prices. If it has already gone in, it won't do any harm.

Mr. MATTHEWS. It won't do any harm, your Honor, if this practice is only to be indulged in a few times, but if the whole case is to be retried —

The CHAIRMAN. No, you mustn't do that. There are certain things, like the cost of labor and the cost of excavation —

Mr. MATTHEWS. If there is any particular item that has been omitted, we should not object.

The CHAIRMAN. Go on.

Mr. BROOKS. I will put a general question.

Q. Whether or not the prices that you named in your schedule were the going prices as of 1898 in the city of Holyoke?

The CHAIRMAN. You need not answer that. We assume that they were. We assume he has testified to that. If he has not, you can put the question.

Mr. BROOKS. I do not think he has.

The CHAIRMAN. Very well, you can answer the question.

A. They were, yes, sir.

Q. And to what extent have you had experience in connection with hydraulic plants in Holyoke in the last few years?

Mr. MATTHEWS. Now this witness was certainly qualified as much as he could be.

The CHAIRMAN. He has stated that.

Mr. BROOKS. Well, I am not certain but what he has. I think very likely he may have. I will withdraw that.

Q. Mr. Green, whether or not in your opinion these engines at the electric light station can be readily compounded? A. They can.

Q. And, if compounded, what do you say about their economical operation and their durability? A. In my opinion they would be as durable and as economical as any engine could be.

Q. And whether or not that type of engine is one that is being manufactured and is in common use? A. Yes, sir, practically so.

Q. And whether or not, in your opinion, there is anything gained in the cost of coal or labor by the use of larger boilers than those of the electric light station? A. There would not be the slightest gain at that plant.

Q. You say "at that plant." Would there be any gain, could there be any advantage in the electrical business, in the running of an electrical central station? A. No, sir, not in such size stations as that is.

Q. Are you familiar with the electro-chemical industries? A. Yes, sir, to some extent.

Q. And are you familiar with the power used relative to the space that is occupied by the industry? A. Yes, sir, in a general way.

Q. And whether or not in your opinion various of the electro-chemical industries could be carried on at this particular site, using the full 16 mill powers of water?

Mr. MATTHEWS. Wait a moment.

The CHAIRMAN. You have opened that question, Mr. Matthews.

Mr. MATTHEWS. Yes, but I would like to inquire as to his qualifications.

The CHAIRMAN. Yes, go on.

By Mr. MATTHEWS.

Q. Mr. Green, what do you mean by electro-chemical, if that is the expression? A. Well, I mean the industries that use electricity in the making of aluminum and carborundum, and such classes of work.

Q. What else besides aluminum and carborundum? A. Why, I think that they use electricity in the manufacture of bleaching powders and also in the manufacture of calcium carbide.

Q. That is all, is it? A. That is all that I think of at the present time.

Q. When you speak of electro-chemical—is that the expression, electro-chemical, or electrical-chemical? A. Electro-chemical, I think, was the expression Mr. Brooks used.

Q. You do not mean electricity for power, but where electricity is used in the actual process of manufacture? A. Yes, sir.

Q. What experience have you had in the manufacture of aluminum with electricity? A. Nothing at all.

Q. What experience have you had with the manufacture of carborundum? A. Nothing.

Q. What experience have you had in the manufacture of calcium carbide with electricity? A. None.

Q. That is the process which results in the basis of acetylene gas, isn't it? A. Yes, sir.

Q. What experience have you had in the use of electricity for manufacturing bleaching powders? A. Nothing.

Q. Are any of these industries carried on in Holyoke, to your knowledge? A. No, sir.

Mr. MATTHEWS. I submit, your Honors, that the witness is hardly qualified to testify.

By Mr. BROOKS.

Q. Mr. Green, as an engineer, have you had occasion to discover the amount of power used for such manufactures as you have already spoken of relative to the space that is occupied?

A. I know about those manufactures in a general way.

By Mr. MATTHEWS.

Q. You mean the manufactures you have just mentioned?
A. Yes, sir.

Mr. MATTHEWS. Are you through, Mr. Brooks?

Mr. BROOKS. Yes.

Q. You said a moment ago you had had no experience with any of these four classes of manufactures with which electricity is used? A. I have had no experience.

Q. What do you mean by saying you are familiar with them

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in a general way ? A. I mean I have read about them to a large extent and their installation ; in fact, I have looked it up to some extent.

The CHAIRMAN. As an engineer, he had naturally studied the amount of power that can be utilized and the space, and it seems to me that qualifies him to testify.

Q. What special study have you made of the amount of power that can be utilized on a given area of land for either of these four purposes ? A. The only thing I know about them is what I have read about them, and I have looked into the processes as they are being installed, knowing the power that is used.

Q. Have you ever examined any plant engaged in the manufacture of any of these four articles by means of electricity ? A. No, sir, never saw a plant.

Q. Never saw a plant ? A. No, sir.

Q. There are not any in Massachusetts, are there ? A. Well, I am not sure. I understood that they were thinking of putting one in, but I don't know whether they have or not.

Q. You do know, don't you, as a matter of fact, that there is no aluminum, carborundum, bleaching powder, or calcium carbide manufactured in Massachusetts ? A. No, I don't know whether they manufacture bleaching powder or not.

Q. You know they don't manufacture either of the other three articles ? A. As far as I know, they do not.

Mr. MATTHEWS. This witness has had no experience of these industries, has never seen or examined a plant, and I do not see that he has the slightest qualification for expressing an opinion, except that he is an engineer. I do not know why that of itself qualifies him. Furthermore, it appears from this witness's testimony that electricity is not used as power —

The CHAIRMAN. No, I understand that.

Mr. MATTHEWS. —In the manufacture of calcium carbide.

The CHAIRMAN. That is, they have to use power to manufacture it.

Mr. MATTHEWS. They have to get power to get the

electricity, in the first place, then they use the electricity in the process of manufacture itself. Isn't that right, Mr. Green?

The WITNESS. Yes, sir.

Mr. MATTHEWS. For instance, in the manufacture of calcium carbide, that is made in an electrical furnace by means of the electric arc. Isn't that so?

The WITNESS. Yes, sir.

Mr. MATTHEWS. I do not know how the rest are made, but it is not by the use of electricity for power at all.

The CHAIRMAN. As I understand it, it is this: the proposition is that this 16 mill power can be utilized for power for the purpose of running this engine. Isn't that the proposition, Mr. Brooks?

Mr. BROOKS. Certainly. The power produces the electricity for the manufacture of these special industries instead of for lighting.

The CHAIRMAN. Now let us see. A man like Mr. Green or Mr. Main or Mr. Allen may very possibly make a study of this question and the utilization of space for power. They cannot be expected to go personally into the particular industry or other than from what they have gathered from the general knowledge which comes to them as to the utilization of space. The objection, it seems to me, is rather to the weight than the materiality, and the witness can testify.

Mr. BROOKS. Now repeat the question.

Mr. MATTHEWS. I take it this is new matter that he has mentioned, these four industries.

The CHAIRMAN. These are not new matters. Mr. Main or some one was asked on cross examination whether this floor space was not large enough as to some of these; I don't remember them all. He made some sort of an answer, and I have forgotten what it was.

Mr. BROOKS. It was opened up—

Mr. MATTHEWS. The general subject of the amount of power to be utilized on this land.

The CHAIRMAN. —Was opened up by you.

Mr. MATTHEWS. Yes, I simply want to find out where

we are with reference to the respective rights of the parties. If I understand the procedure, it has been this : the City put in the valuation of this land as a mill site, and we responded for the defence —

The CHAIRMAN. You mean the Company.

Mr. MATTHEWS. I mean the Company, yes. The respondent replied by showing or attempting to show that you could not utilize more than four or five mill power on that area. Now, upon rebuttal, the Company endeavors to show that four different kinds of manufacturing enterprises could be suggested which could utilize the 16 mill power in one way or another. And my question is whether the mention in the evidence of those four particular industries is not of itself new matter, not objectionable for that reason, but of such a nature as to permit us to show how aluminum, carborundum, bleaching powder, or calcium carbide could be carried on at this plant ?

The CHAIRMAN. I think so.

Mr. MATTHEWS. Go on, Mr. Brooks.

Mr. BROOKS. If you will read the question.

(Question read, as follows :) —

“And whether or not, in your opinion, various of the electro-chemical industries could be carried on at this particular site, using the full 16 mill powers of water ?”

A. I think it could, yes, sir.

Q. You tested the steam plant at the electric station ? A. Yes, sir.

The CHAIRMAN. When ?

Mr. BROOKS. I did not ask that.

The CHAIRMAN. Oh, yes.

Q. When was it ? A. It was about a year ago last January.

Q. Yes. And what do you say with reference to its condition, whether good or bad or otherwise ?

Mr. MATTHEWS. This witness testified to the test of January, 1899.

Mr. BROOKS. He testified he made a test.

The CHAIRMAN. I think he is precluded from that.

Mr. BROOKS. I purpose to show he has examined this more recently.

The CHAIRMAN. How recently?

Mr. MATTHEWS. This is the same date, a year ago.

Mr. BROOKS. A year ago last December. That was in January, 1899, as I recall it. I refer now to a test he made last December.

The CHAIRMAN. Was that when Mr. Main or some other people were present?

Mr. BROOKS. No, sir.

Mr. MATTHEWS. This is another test, not the one you made January, 1899?

The WITNESS. The test I just spoke of was the test I made with Mr. Whitham.

Q. In January, 1899? Were you there on December last, at this plant? A. Yes, sir, that is the time that Mr. Main was testing.

Q. Were you there then? A. Yes, sir.

Mr. BROOKS. Then I was mistaken.

The CHAIRMAN. Well, then, of course, that is open.

Q. Now, Mr. Green, what did you find to be the condition of the steam plant at this time, in December last, when you were there?

Mr. MATTHEWS. I understand this test was made after the Company closed their case; is that so, Mr. Brooks?

Mr. BROOKS. I beg pardon?

Mr. MATTHEWS. Was this test made or this visit made after the Company closed its case?

Mr. BROOKS. Certainly.

The CHAIRMAN. You asked for an examination?

Mr. BROOKS. Certainly, it was.

Mr. MATTHEWS. If it was done before the Company closed its case, I think they would be precluded; if not, not.

(Last question read.)

A. It was in very good condition throughout.

Q. Yes, and what was the—did you also see the hydraulic plant at the same time? A. Yes, sir.

Q. And what did you find its condition to be? A. It was in good condition.

Q. And did you also look over the electric plant at this time in last December?

Mr. GREEN. What is that question?

(Question read.)

A. I made no detailed examination of it, only as I was passing through the room.

Q. Well, did you see it enough to be able to express an opinion as to its condition? A. I think so, yes.

Q. And what was its condition? A. Good.

Q. Now what, if anything, is the loss in power of a properly proportioned and properly applied belt? A. The loss of power on such belt is so small that it can hardly be measured.

Q. Yes. And what do you say is the loss of power in a properly applied and properly made gear? A. The loss in such gearing is so small it practically cannot be measured.

Q. And have you had occasion to discover in your own business how old gears are in some of your concerns? A. Yes, 'sir.

Q. At the present time. And how old are they?

Mr. GREEN. What does that question refer to?

(Preceding question read.)

Mr. GREEN. It does not seem to me that is competent.

Mr. BROOKS. I mean, of course, the gears that are driven by the vertical wheel.

The CHAIRMAN. You raised the question as to the gears; they say that gearing lasts all right. Now he asks him to illustrate it, as an expert.

Mr. GREEN. That is going into his own plant, telling about the age of the gears and belts.

The CHAIRMAN. That is it, but it is practically giving a reason for his answer. I don't know about that. What do you say, Mr. Cotter?

Mr. COTTER. I think he may answer.

The CHAIRMAN. All right, answer.

A. Well, we have gears running that have been running constantly for twenty years.

Q. And what is their condition, their working condition, and their effectiveness? A. Why, practically they are as good to-day as they were the day they were started.

Q. Mr. Green, from your examination of the hydraulic plant at this station, and from your knowledge and experience in the installation of hydraulic plants in Holyoke and elsewhere, what do you say with reference to this hydraulic plant, whether up to date and modern or to the contrary?

Mr. GREEN. Why, it seems to me, if your Honor please, that was part of the petitioner's original case.

Mr. BROOKS. Not at all.

The CHAIRMAN. We think that is, Mr. Brooks. He has already testified to that. You put in witnesses to show the plant was up to date and modern.

Mr. BROOKS. Of course, they made this statement, may it please your Honor, that horizontal wheels were a good deal better than vertical wheels—

The CHAIRMAN. Call our attention to that.

Mr. BROOKS. And that our vertical wheels are not up to date.

The CHAIRMAN. Certainly.

Mr. BROOKS. And various other parts I don't now seem to recall, and it seemed to me it was legitimate rebuttal. I don't mean to go into every detail.

The CHAIRMAN. I think you will have to, if it is objected to.

Mr. BROOKS. Very well.

Q. Mr. Green, which, in your opinion, is the more effective for this particular plant, a vertical or a horizontal wheel? A. I should think that the horizontal—that the vertical wheel, as installed there, is the best for this plant.

Q. And which do you say is the better generally, from your own experience, vertical or horizontal wheels? A. I think the vertical wheels are generally more efficient than the horizontal.

Q. Yes. And have you had recent experience with both vertical and horizontal wheels in the various thread companies that belong to the American Thread Company? A. Yes, sir.

Q. And, from your experience in your own concerns and from the tests that you have made, which do you say is the more effective? A. The vertical have been the best thus far.

Q. Assuming that the City of Holyoke, if it owns this plant, or any owner of this particular plant in question, desired to install horizontal wheels, would there be any practical difficulty in the installation of horizontal wheels at this plant? A. No, sir.

Q. And would there be any considerable expense attached to the installation, aside from the cost of the wheel at this plant, if a horizontal wheel were desired to be installed? A. Well, I should think not, aside from the cost of the wheel and the rigging.

Q. Since you testified in this case some months, if not years ago, have you had occasion in Holyoke to consider the question of steam as against the use of water, use of steam as against the use of water? A. I should have to have the question read. I didn't catch that.

(Question read.)

A. Yes, sir.

Q. And at which mill? A. The Hadley Company.

Q. The Hadley Thread Company? A. Just the Hadley Company.

Q. The Hadley Company? And when you began your superintendency of the motive power of the American Thread Company, what power was the Hadley Company using, steam or water? A. They were using both, but were not using their wheels up to their full power.

Q. And have you since your incumbency in your present position purchased surplus water? A. Yes, sir.

Q. In preference to what? A. In preference to the use of steam.

Mr. MATTHEWS. I object. That is directly in the line with their original case.

The CHAIRMAN. I don't know about this particularization. Let us see. The petitioner set up that so much water power was worth so much, so much mill power, that this particular power was worth so much. And, when the respondent

came on to try its case, they undertook to point out that the use of water power on this plant was inferior to the steam power, and that, to run water in that plant in conjunction with the auxiliary steam, there would be a loss as compared with setting up an independent steam plant.

Mr. MATTHEWS. At the Company's prices, yes.

The CHAIRMAN. At the Company's prices ; but, under some circumstances, with measured water, or the payment of certain prices, there would be a stand-off, and perhaps water would have certain advantages. What are you trying to show, Mr. Brooks ?

Mr. BROOKS. I am trying to show that this practical man has found it more desirable and cheaper to use less steam and more water at surplus rates of \$1,800 a year, in his case.

The CHAIRMAN. In that particular mill ?

Mr. BROOKS. In the Hadley Thread Company, in the city of Holyoke.

The CHAIRMAN. We will hear you on it, Mr. Matthews.

Mr. MATTHEWS. I don't care to argue these questions. It is all a matter of discretion with the Commission.

Mr. BROOKS. I don't address it to the Commission's discretion. I say it is legitimate rebuttal, in regard to the testimony of Mr. Blood, Mr. Warner, and one or two others.

The CHAIRMAN. We will admit it, Mr. Brooks.

Q. You have also an auxiliary steam plant ? A. Yes, sir.

Q. At the Hadley Company ? A. Yes, sir.

Q. Which you run at times ? A. We run it all the time.

Q. Which you run all the time. You now have, you say, chosen to discard some of your steam power, and have taken surplus water in preference ? A. Yes, sir.

Mr. MATTHEWS. He didn't say that.

Mr. BROOKS. I say he did say it.

The CHAIRMAN. The action or conduct is of no consequence. You can take his judgment and opinion as to which is superior, in his judgment, or how much more economical it is.

Q. What do you pay for the water that you use at the

Hadley Company which is common surplus? A. On the basis of 24-hour power, it would be \$1,800 a year.

Q. Which do you find to be the cheaper, the surplus surplus water, at this rate, or steam power? A. Surplus is the cheapest.

Q. And for how many days does this rate cover the \$1,800,—how many days of the year? A. I think it is 300.

The CHAIRMAN. I want to ask a question before I forget it. How much do you say is the charge made for surplus water, the tax on permanent, for 24 hours?

Mr. MATTHEWS. It is \$1,500 for 300 days, as measured.

The CHAIRMAN. I have been looking over some papers, and I got the impression that it was a higher price.

Mr. GREEN. There is 16 $\frac{2}{3}$ per cent. rebate.

Mr. MATTHEWS. Mr. Chairman, if you will look at Mr. Sickman's testimony, you will find that he explained that very matter in Vol. VI. of the testimony.

The CHAIRMAN. Go on, Mr. Brooks.

Mr. BROOKS. I don't know of any more questions I care to ask Mr. Green.

Cross examination by Mr. MATTHEWS.

Q. Mr. Green, in regard to these aluminum, carborundum, and calcium carbide manufactories, how many are there and where are they situated in this country? A. That is a question I couldn't answer.

Q. Don't you know any? A. I know there are some located at Niagara Falls.

Q. Do you know how much power those factories use,—the aluminum, carborundum, and calcium carbide? A. I don't remember, no, sir.

Q. Don't they use ten thousand horse power, at least? A. They may, or larger; I don't know.

Q. Do you know the price they pay for it? A. No, sir, I don't.

Q. Isn't it \$10 per horse power per annum for twenty-four hours? A. I don't know.

Q. Or less? A. I don't know what the price is.

Q. You don't know the amount of power they use or the cost of it? A. I don't.

Q. Do you know the area of the land occupied by the plant at Niagara Falls? A. No, I don't think I do. I don't know it.

Q. You said you didn't know any such manufactory located in Massachusetts. Do you know any in New England? A. No, sir.

Q. About bleaching powder manufactories, do you know any in Massachusetts using electricity? A. I don't know whether there is one located in Massachusetts or not. I know it was being looked up a year or two ago.

Q. You don't think there is any? A. I don't think it has ever been developed.

Q. You don't think there is any in Massachusetts? A. I don't think so.

Q. Or in New England? A. I don't know whether there is any in New England or not.

Q. Do you know about the plant at Syracuse? A. I don't know whether that is for bleaching powder.

Q. You don't know whether they are using water power or steam power? A. No, sir, I don't.

Q. When you and Mr. Main were at the electric light station last December, did you go down in the wheel pit? A. I didn't go into the wheel pit, no, sir.

Q. You simply went into the building? A. Yes, sir.

Q. You didn't go down? A. No, sir.

Q. Have you put in any horizontal wheels yourself? A. Yes, sir.

Q. Recently? A. Yes, sir.

Q. Where? A. One in Holyoke—a pair of them in Holyoke—and five in Willimantic. They are not all in yet, but we are installing them.

Q. One in Holyoke that is being put in now? A. That is running.

Q. When was that put in? A. The last shut-down we had. I think it was in August.

Q. What do you mean by "we"? A. I mean the last shut-down in Holyoke.

Q. Where did you put this plant in for a horizontal wheel?
A. In Holyoke?

Q. Yes. A. The American Thread Company.

Q. For the American Thread Company? A. Yes, sir.

Q. Which plant? A. The Merrick No. 2.

Q. Have you put in vertical wheels lately in Holyoke? A.
No, sir — yes, I have put in one.

Q. Where? A. The Farr Alpaca Company.

Q. You have put in, in your recent experience in wheels in Holyoke, five or six horizontal wheels and one vertical wheel?
A. I didn't say that; not in Holyoke.

Q. Well, where have the other horizontal wheels been put in?
A. Five of them are located in Willimantic. They are not all in yet. They are not all running yet.

Q. Have you put in any vertical wheels in Willimantic? A.
No, sir, I haven't.

Q. Taking Willimantic and Holyoke together, I am correct in saying that in your recent experience you have installed four or five horizontal wheels and one vertical wheel? A. Yes, sir.

Q. By using horizontal wheels, don't you get rid of gears?
A. Yes, sir.

Q. Don't you get rid of friction losses, if there are any?
A. I don't think so.

Q. If there are any, you get rid of them, don't you? A.
No, I don't think you do.

Q. Have you made any tests to obtain the loss on gears or belt?
A. No, sir, I haven't.

Q. Never? A. No, directly I haven't.

Q. What? A. Not directly for that purpose.

Q. You never have made an examination, then, by means of actual tests, for the purpose of ascertaining whether or not there was any friction loss in the use of gears connected with vertical wheels, and, if so, how much? A. No, sir.

Q. Now where is this mill of the Hadley Company that you speak of? A. In Holyoke.

Q. What is its legal title? A. The Hadley Company.

Q. Where is it? A. Located on Canal Street, on the second level.

Q. Does it discharge into the river? A. Into the river.

Q. It discharges into the river? A. Yes, sir.

Q. When did you become connected with that plant? A. Two years ago last March, when they went into the American Thread Company.

Q. That is now part of that concern? A. Yes, sir.

Q. They were then using steam? A. Steam and water.

Q. What sort of water power were they then using? A. They had permanent.

Q. They had permanent power and steam power? A. Yes, sir.

Q. What are they using now? A. The same.

Q. Are they using now the same power that they were? A. Yes, sir.

Q. Are they using any less steam power than they were? A. Yes, sir.

Q. They are using less steam power? A. Yes, sir, to the extent of the surplus they use.

Q. They substituted surplus water power for steam? A. Yes, sir.

Q. Now that surplus power is paid for as measured? A. They pay for it as they use it.

Q. And as measured by the gate wheels? A. Yes, sir.

Q. If they don't use it, they don't pay for it? A. No, sir.

Q. If they do use it, is it for 24 hours, for 365 days, or for 300 days, at \$1,800? A. 300.

Q. How do you figure that out? A. They pay \$2.50 a day for 58 hours a week.

Q. Isn't there a rebate on that? A. Not on the \$2.50. On \$3 a day there is a rebate.

Q. Does this mill have a contract with the Holyoke Water Power Company for the use of surplus power? A. Only our regular indentured power. We have a right to use surplus with the permanent.

Q. Is that the surplus you are using? A. Yes, sir.

Q. How much permanent have you? A. I don't remember whether it is 8 or 10 mill powers.

Q. How much surplus are you using, on the average? A. We probably are using from 100 to 150 horse power.

Q. How many mill powers of surplus? A. That would be about 2 to 2½.

By the CHAIRMAN.

Q. That you are using? A. Yes, sir, surplus. I might say, in explanation of that, that we are just commencing to use that surplus,—just putting in the apparatus to get the wheels connected to the engine, the belting, and shafting,—so I can't answer that definitely.

By Mr. MATTHEWS.

Q. You said to Mr. Brooks that you had made a saving. How do you figure that out, if you can't answer my question?

A. I know what water power we have got and what steam power, and I know what water power the Company is using.

Q. You don't know how much water power you are using, you say? A. I do know, yes, sir. I could answer that question.

Mr. BROOKS. He said he did know.

The WITNESS. I said I don't remember the exact amount of power they had there. I do know what water power they are using.

Q. You said you wanted to make an explanation a moment ago. I thought you said you hadn't got your plant fully installed yet? A. Not fully, no, sir.

Q. How can you tell what it costs, if your plant is not fully in operation? A. If it cost more, I think I would have to pay for it.

Q. Then your saving is a matter of estimation? A. I don't think so.

Q. Mr. Green, if you don't know how much power you are using, how can you tell how much saving there is by using water instead of steam? A. I know I am not burning as

much coal as I was, and I know how much was burned. I know how much steam power costs me and I know how much water power costs me.

Q. That would be so, if you knew how much water power you were getting and how much you were paying for it.

Mr. BROOKS. He says he does know.

The WITNESS. I know.

Mr. MATTHEWS. What I am trying to get at is how much water power you are using, Mr. Green. I understood the witness to say that the reason he couldn't answer that question was because he didn't have the papers here,—I supposed that was the reason,—but the reason he gave was that the plant wasn't in operation, wasn't fully installed.

The WITNESS. Part of it is in operation. It isn't all in operation.

Q. You cannot tell exactly how much power you are using now? A. Not any nearer than I have testified.

Q. What do you make at that mill? A. We make yarns and threads.

Q. How long do you run the machinery a day? A. 58 hours a week.

Q. And for that you pay \$2.50 a mill power? A. Yes, sir.

Q. And the way you get the \$1,800 is to double that, which would give you something less than 24 hours a day, and then add enough to pro rate the \$5— A. It figures out about that.

Q. To pro rate the \$5 on a 24-hour basis? A. Yes, sir.

Q. Isn't there a 16⅔ per cent. discount from that price? A. Not from the \$2.50.

Q. Do you understand that you have a different agreement from the other mills in Holyoke in regard to surplus? A. No, sir.

Q. Do you understand it is the same? A. Yes, sir.

Q. Do you understand that the mills in Holyoke pay \$1,800 a year for 300 days for surplus, or \$1,500, which?

Mr. BROOKS. Do you mean 24-hour days?

Mr. MATTHEWS. On a 24-hour basis, yes, sir.

A. For that surplus power they pay at the rate of \$1,500 a year, I think, for 24 hours.

Q. And you claim, then, that your mill stands exceptional and pays more? A. No, sir, we pay the same rates; but we run less time, therefore we are paying at that rate for the time we run.

Q. But you could run longer, couldn't you? A. We could not under the laws of Massachusetts.

Q. Applicable to your industry? A. Yes.

Q. You could by another shift, couldn't you? A. Possibly, yes.

Q. If you did, if you ran long enough, you would get your surplus power at the rate that the other mills do, \$1,500? A. Yes, sir.

Q. Do you know what you pay for the permanent? A. Three.

Mr. BROOKS. Wait a moment; you are asked if you know. A. I do.

Q. Well, what is it?

Mr. BROOKS. How is that competent?

Mr. MATTHEWS. It is all water power, and it all has a bearing upon the value of this surplus power.

The CHAIRMAN. We will take it, Mr. Brooks. How much do you say?

Mr. BROOKS. We would like to save the question, because it is the same question that has arisen before.

A. \$300 a year per mill power.

Q. What is that for, 24-hour power or 12-hour power?

A. That is for 16-hour power, I think.

Q. 16-hour power, \$300 a year. A. Yes, sir.

Q. How many mill powers do you have at that price? A. I cannot tell you at the Hadley how many we do have.

Q. Eight or ten, something like that? A. I think so, yes, sir.

Q. Then you do not use up to your 50 per cent. allowance for surplus, then, if you only use about 2 mill powers of surplus?

A. No, sir, I am only using up to the wheel development.

Q. To answer my question point blank, or categorically, Mr. Green, if you have 8 or 10 mill powers and only use 2 or 3 surplus, you are not using up to your 50 per cent. privilege, are you? A. No, sir.

The CHAIRMAN. I do not see the competency of the valuation of permanent power.

Mr. MATTHEWS. Only this, that the witness says that on the whole he is getting his power cheaper now than he was before. The explanation is that he is getting 11 mill powers, Mr. Green tells me, at \$300 a year; at least, that would seem to be the explanation. He could afford to pay almost any price for surplus.

The CHAIRMAN. He says he is paying \$1,500 for permanent power.

Mr. MATTHEWS. No, \$300, sir, \$300.

Q. Mr. Green, see if I am correct. You have 11 mill power? A. Yes.

Q. And you pay \$300 a year for that 16-hour power; is that right? A. Yes, I think that is right.

Mr. MATTHEWS. Mr. Green, my associate, gives me the figure 11.

The CHAIRMAN. Well, I do not see that that is of any consequence here, because the proposition advanced by the petitioner with reference to this witness is this: that he gets the surplus water—the broad proposition made is that he gets his water cheaper than he gets his steam, and refers it to the surplus water.

Mr. MATTHEWS. On cross examination I show that he ought not to distinguish between surplus and permanent.

The CHAIRMAN. Very well; let it stand.

Q. You have 11 mill power, permanent, 16-hour power, and you are also using somewhere around two or three mill power of surplus? A. Yes, sir.

Q. At the rate of \$1,500 a year, if you used it all you could? A. Yes.

Q. And that arrangement, on the whole, you say, is cheaper than steam power? A. I did not say that, no, sir. The permanent power has nothing to do with the question of surplus.

Q. How much permanent power did you use before you took on surplus? A. All we had.

Q. But you are not yet using up to your 50 per cent.? A. No, sir.

Q. Did you have to install any further or additional plant to utilize the additional water power? A. No, sir. Well, not any wheel work. We had to put in belts and shafting to use it.

Q. Did you discontinue one engine at the Hadley mill? A. No, sir.

Q. Did you tell Mr. Brooks that you discontinued the use of any steam engine? A. No, sir. What I have done there is simply, I have used more water power and taken power off the engine.

Mr. MATTHEWS. That is all.

Re-direct examination by Mr. BROOKS.

Q. Mr. Green, how many vertical wheels do you have in the various mills of which you have charge?

The CHAIRMAN. Did Mr. Sickman give us the number of vertical wheels in Holyoke, or somebody else?

Mr. BROOKS. He did in Holyoke, your Honor, but this is not confined to Holyoke.

The CHAIRMAN. All right; go ahead.

A. I cannot state exactly, Mr. Brooks; I think 20 to 23.

Q. How many horizontal wheels have you in the various mills of the American Thread Company? A. Six, or five instead of six.

Q. Five horizontal, and twenty-three in the various mills of the American Thread Company that are vertical? A. Yes, sir.

Q. Have you tested both of them? A. Yes, sir.

Q. Both the vertical and the horizontal? A. Yes, sir.

Q. And is the opinion that you have expressed here with reference to vertical and horizontal wheels derived from your tests of the two? A. Yes, sir.

Q. Why did you start to install horizontal wheels? A.

Why, the first installation of horizontal wheels I made we put in with the idea that we were going to get better efficiency.

Q. You had heard that? A. We had heard it, yes, sir; but we did not get it.

Q. You speak of the permanent power of the Hadley Company. Do you say that for that power you are paying only \$300 per year,—for the permanent power? A. Yes, sir, I think that is—

Q. I want to ask you,—do the 11 permanent powers that you have cost you \$4,200 a year? A. I cannot state exactly, Mr. Brooks.

Q. Very well. Do you know how long ago the indenture was made for permanent power between the Holyoke Water Power Company and the Hadley Company,—how many years ago? A. I cannot state, Mr. Brooks; I have forgotten. It has passed my mind.

Q. Does it run back to 1860?

The CHAIRMAN. Do you say so, Mr. Brooks?

Mr. BROOKS. Yes.

The CHAIRMAN. Very well.

Mr. MATTHEWS. It is on the list, isn't it?

Mr. BROOKS. I am not sure; I suppose it is.

Mr. MATTHEWS. We do not question it. It is an old power, an old lease.

Mr. BROOKS. Very well. That is all.

WALLACE E. SAWIN, *resumed.*

Mr. BROOKS. This, may it please your Honors, is the re-direct examination of Mr. Sawin.

Mr. MATTHEWS. I do not see why, because I understood that the respondent had closed its case and Mr. Brooks had begun his rebuttal.

Mr. BROOKS. I told you, Mr. Matthews, and the Commission the very day that you had him on the stand that I would take him up the next day for re-direct examination. The next day we did not sit, and since that time Mr. Sawin has been kept away by sickness in his family.

Mr. MATTHEWS. If you did, Mr. Brooks, your observations are well founded.

Mr. BROOKS. I certainly did.

Re-direct examination by Mr. BROOKS.

Q. Mr. Sawin, have you with you the drawing showing the original surface of the ground at the electric light plant? A. Yes, sir.

Q. Will you produce it? (Plan produced.) I would like to show this plan to the Commission; and, Mr. Sawin, will you make any explanation of it that you deem meet to the occasion? A. This drawing is gotten out at the same scale as the drawing that is in the case showing the works, and I have copied on to it from a larger map the original cross sections all through here of the ground. And also here is a stone wall; here is the dynamo room right in here; this is the carpenter shop, and the wheel house is in here. This drawing shows the ground as it originally was. There was a stone wall that ran out here, with about 12 feet of a drop from the elevation of this ground to that below. The elevations are right on there.

By Mr. MATTHEWS.

Q. Originally, you mean? A. As it was before we built.

Q. That is, in 1891 or 1892? A. Yes, sir. The top of

the wall is 99.70 at that end,— at the east end ; at the west end it is 101. The elevation of the ground at the foot of the wall is 98.30 at the west end and 90.30 at the east end.

By Mr. BROOKS.

Q. Is there anything further that you desire to say with reference to this plan, Mr. Sawin? A. I do not think so, if the Commission understand it.

The CHAIRMAN. Have it marked, hadn't you better?

Mr. BROOKS. Certainly.

The WITNESS. I would say this : that the proposed buildings, as I call them, are the present buildings,— on this plan they are proposed, and shown in here dotted.

Q. I don't understand you. A. This drawing is taken from a drawing that was made before we built the electric plant.

Q. Yes. A. And at that time they were called "proposed buildings,"—the present buildings.

Mr. BROOKS. And on this drawing they are shown dotted.

By Mr. TURNER.

Q. The dotted lines on this plan show the buildings as they now exist? A. Yes, sir.

Mr. BROOKS. Mark this, if you please, Mr. Burt.

(The plan was marked "Exhibit 248, F. H. B.")

Q. Mr. Sawin, have you gone again over your figures for quantities at this electric light plant that you have testified to in this case? A. I have.

Q. In connection also with the plan that you now introduce? A. Yes, sir.

Q. Do you find any variance in the figures that you have already given for the different quantities at this station? A. Nothing in the electric light.

Q. Did you also go over the quantities that were put in through Mr. Walther for the gas plant? A. Yes, sir.

Q. And do you find any differences between your figures and his? A. In one particular instance.

Q. And what was that instance? A. In No. 1 holder I find quite a few more brick than he had.

Q. How many more? A. 83,266.

By the CHAIRMAN.

Q. How many does he have? A. He had 372,440.

By Mr. BROOKS.

Q. You have how many? A. 455,666. In other words, I checked the other side,—the City's.

By Mr. MATTHEWS.

Q. You what? A. I checked Mr. Kirkpatrick.

By Mr. BROOKS.

Q. That is, you mean Mr. Kirkpatrick found the same number that you found? A. Practically. Mr. Kirkpatrick found 440,000, I found 455,000.

Q. Have you the details here of the calculations—quantity calculations—at both the electric station and the gas plant? A. I have.

Mr. GREEN. When were they made?

Q. It is suggested when were they made? A. The details of the electric plant and the gasometer were made at the time the schedules were put in,—they are the original figures. The details of the gas plant are figures that I have made this last winter to check up Mr. Walther.

Mr. BROOKS. I do not care to have those printed. I would like to offer them.

Mr. GOULDING. What do those show, the parallels?

Mr. BROOKS. I think so.

By Mr. MATTHEWS.

Q. Mr. Sawin, will you describe them, so the description can appear in the record? A. Well, here is a schedule of materials, quantities, etc., in the Bridge Street gasometer, No. 3 holder. Schedule of materials, quantities, etc., in the Holyoke Electric Light and Power plant.

Mr. BROOKS. Just mark that.

(Schedule of materials, quantities, etc., in Bridge Street Gasometer, marked "Exhibit 249, F. H. B.")

(Schedule of materials, quantities, etc., in Holyoke Electric Light and Power Plant, marked "Exhibit 250, F. H. B.")

By Mr. BROOKS.

Q. Now what is the next detail? A. Schedule of quantities in Holyoke Gas Works.

Mr. BROOKS. Just mark that.

(Schedule of quantities in Holyoke Gas Works, marked "Exhibit 251, F. H. B.")

Q. Have you also made schedules showing a comparison between the estimates of quantities of the various witnesses in the case? A. Yes, sir.

Mr. BROOKS. I shall introduce those, may it please your Honors. I do not care to have these printed.

The CHAIRMAN. What are those, comparative?

Mr. BROOKS. Yes, sir. We thought it might be of use hereafter.

The CHAIRMAN. Don't you think it would be convenient to print those?

Mr. MATTHEWS. Not if they are anything like the other comparisons we have seen from the same source.

The CHAIRMAN. We would like to have them printed.

Mr. MATTHEWS. We haven't any objection to their going into the report, if Mr. Brooks wants them; but we do not wish to be understood as accepting them as comparisons, by any manner of means.

The CHAIRMAN. We think it would be much better to have them printed, and then you can criticise them as much as you have a mind to, Mr. Matthews.

Mr. BROOKS. Very well.

The CHAIRMAN. You can put in your own.

Mr. MATTHEWS. Yes, sir.

Mr. BROOKS. Then these are to be printed that I have now offered.

The WITNESS. Mr. Brooks, can I explain one thing on the gasometer?

Mr. BROOKS. I will come to that in a minute. (To the stenographer.) Will you mark these? Mark them separately.

(Comparative schedule, electric light plant, marked "Exhibit 252, F. H. B.")

(Gas works comparative schedule, marked "Exhibit 253, F. H. B.")

(Comparative schedule, gasometer No. 3, marked "Exhibit 254, F. H. B.")

[EXHIBIT 252.]
COMPARATIVE SCHEDULE, ELECTRIC LIGHT PLANT.

HEADGATES.

March, 1901.

W. E. SAWIN.

	Sawin.	Kirtpatrick.	Ranger.	Main.	Manning.	Mason.
Excavation	1,085 yds.	1,000 yds.	998 yds.	1,085 yds.	966 yds.	770 yds.
Canal wall taken down	262 "	230 "	223 "	262 "	213 "	
Gravel puddling	207 "	140 "	135 "	207 "	263 "	
Backfill	744 "	300 "	315 "	692 "	188 "	520 "
Canal wall relaid (rubble)	71 "	70 "	75 "	71 "	29 "	
Rubble masonry	154 "	154 "	146 "	154 "	159 "	210 "
Brick	4,977	5,000 "	5,120 "	5,000 "	1,130	
Sheet piling hemlock	8,703 ft.	8,300 ft.	8,330 ft.	8,700 ft.	6,000 ft.	6,894 ft.
Hemlock timber	3,907 "	3,900 "	3,900 "	3,900 "	3,900 "	3,900 "
3-in. hemlock plank	3,291 "	—	3,029 "	3,200 "	2,800 "	3,062 "
2-in. Western pine plank	1,094 "	1,100 "	1,056 "	1,100 "	1,100 "	
Southern pine timber	4,560 "	4,600 "	4,600 "	4,600 "	4,300 "	
Iron rack	48' 0 x 12' 6"	—	—	564 sq. ft.	564 sq. ft.	
Wood gates	1,953 ft.	—	—	\$1,000	\$1,200	
Iron rods	175 lbs.	—	—			
Penstocks	43,750 lbs.	—	—			
Iron rings with bolts	4	—	—			
Vent pipes	2	—	—			
Boxes and hangers, 2 1/2-in. shafts, etc.	67 ft. 4 in.	—	—			
1 3/4-in. shafts, with boxes and hangers	22 ft. 6 in.	—	—			
Racks and pinions	8 sets	—	—			
Wicket gates	2	—	—			
Iron rolls with stands and guides	16	—	—			
Worm gears	4 sets	—	—			
24-in. hand wheels	4	—	—			
1 1/2-in. shafts with boxes, etc.	9 ft. 6 in.	—	—			
Stands	2	—	—			

WOOD FENDER.

	Sawla.	Kirkpatrick.	Ranger.	Main.	Manning.	Mason.
Southern pine timber	1,146 ft.					
Spruce	316 "	—	{ \$48	{ \$50	{ \$40	
2-in. spruce plank	507 "					
Labor on	25,000 "	\$350	\$500	\$250	\$300	

WHEEL PIT AND TAILRACE.

	Sawla.	Kirkpatrick.	Ranger.	Main.	Manning.	Mason.
Excavation	32,333 yds.	23,600 yds.	22,885 yds.	25,000 yds.	23,129 yds.	21,968 yds.
Canal wall taken down	343 "	340 "	320 "	343 "	326 "	342 "
Gravel puddling	1,258 "	1,200 "	1,204 "	1,250 "	2,637 "	
Stone filling under back gate	50 "	50 "	48 "	50 "	34 "	
Backfill	18,389 "	14,600 "	15,242 "	13,400 "	9,914 "	12,151 "
Canal wall relaid (rubble)	105 "	105 "	178 "	105 "	45 "	
Rubble masonry	1,934 "	2,073 "	1,893 "	1,850 "	1,832 "	2,068 "
Cut granite masonry	7½ "	7½ "	8 "	7½ "	7½ "	
Brick wheel pit	99,851 "	—	108,120 "	100,000 "	—	
Piers, etc.	272,392 "	801,300 "	—	—	—	764,448*
Brick tailrace	653,292 "	—	696,816 "	628,000 "	695,000 "	
(Mud sills)						
Hemlock timber	61,075 ft.	61,000 ft.	62,267 ft.	61,000 ft.	60,000 ft.	62,875 ft.
4-in. hemlock plank	96,720 "	87,000 "	86,486 "	86,000 "	77,000 "	80,000 "
2-in. pine plank	36,017 "	30,000 "	31,656 "	32,000 "	29,000 "	29,600 "
Spruce sheet piling	22,987 "	5,600 "	2,105 "	3,000 "	24,000 "	2,728 "

* Piers, etc., 235,448.

WHEEL HOUSE.

	Sawin.	Kirkpatrick.	Ranger.	Main.	Manning.	Mason.
Brick	65,596	64,000	62,006	65,600	62,000	62,060
Granite door and window sills	26.39 cu. ft.	\$40.60	\$55.00	\$56.00	\$34.00	
Southern pine timber	8,331 ft.	8,300 ft.	6,228 ft.	8,300 ft.	7,000 ft.	
2-inch Southern pine plank	3,208 "	3,200 "	3,924 "	3,200 "	3,200 "	
2-inch roof plank	7,811 "	7,500 "	6,748 "	7,500 "	6,800 "	
Doors and frames	2	2	2	2	2	7,040 ft.
Windows and frames	11	5	11	11	11	
Gravel roof	2,065 sq. ft.	2,100 ft.	2,045 ft.	2,065 ft.	2,040 ft.	
Zinc flashing	182	—	—	\$10.00	\$5.00	
Cast iron wall plates	244 lbs. }	\$12.00	\$8.50	244 lbs.	\$15.75	
Bolts	224 "	—	\$5.04	224 "	\$15.75	
1-inch pipe railing	243 ft.	}				
1-inch steam pipe	163 "					
1-inch steam pipe	20 "					
Condenser	1					
Valves	2	—	—	\$61.24	\$61.24	
1-in. gas pipe	13 ft. 9 in.	}	}			
1-in. gas pipe	70 ft. 8 in.					
1-in. gas pipe	3 ft. 0 in.					
Gas burners	3	}				
Whitening of walls	1,628 sq. ft.					
Painting		\$25.00	\$25.00	\$36.00	\$36.00	

TUNNELS.

	Sawia.	Kirkpatrick.	Ranger.	Main.	Manning.	Mason.
Excavation	584 yds.	385 yds.	575 yds.	594 yds.	380 yds.	615 yds.
Backfill	526 yds.	104 yds.	183 yds.	398 yds.	143 yds.	126 yds.
9-in. flaggers	597 sq. ft.	597 ft.	342 ft.	597 ft.	646 ft.	432 ft.
Brick	86,265	59,700	62,750	{ 16 piers @ \$16 62,000	59,500	89,472
Concrete	72.8 yds.	75 sq. yds.	70 yds.	72.8 yds.	71.8 yds.	69.3 yds.
Southern pine timber	107 ft.	100 ft.	84 ft.	107 ft.	107 ft.	
Cast iron	3,438 lbs.					
Bolts	476 "					
2-in. steam pipe	140 ft. 3 in.					
Valve	1					

DYNAMO BUILDING.

	Sawin.	Kirbpatrick.	Ranger.	Main.	Manning.	Mason.
Excavation	5,041 yds.	2,900 yds.	2,900 yds.	2,930 yds.	—	3,333 yds.
Backfill	1,692 "	1,273 "	772 "	1,300 "	—	904 "
6-in. flaggers	3,396 sq. ft.	}	3,538 ft.	{	{	{
9-in. flaggers	512 "		582 yds.			
Concrete	587 sq. yds.	587 yds.	621,674	360,600		587 yds.
Brick	636,813	633,000		272,412		
Red mortar	13,355 sq. ft.			432 yds.		417 yds.
Rubble masonry	432 yds.	432 yds.	394 yds.	{	{	{
Cut stone (blue stone)	190 cu. ft.	\$344.10	\$370			
Granite door and window sills	165 "			190 cu. ft.		
Southern pine timber	40,211 ft.	31,000 ft.	31,030 ft.	34,000 ft.		31,255 ft.
4-in. spruce plank	33,683 "	}	{	{	{	{
3-in. spruce plank	25,261 "					
3-in. pine roof plank	27,995 "	57,978 "	29,739 "	33,683 "		53,830 "
7-in. Southern pine sheathing	2,658 "	27,562 "	24,740 "	27,995 "		23,829 "
1-in. pine sheathing	10,112 "	}	{	{	{	{
14-in. maple top floor	18,946 "					
Outside wood platforms	3	16,700 "	21,580 "	1,000 "		3,090 "
Windows and frames	102	3	3	16,500 "		21,700 "
Doors and frames	16	102	102	3		
Cast iron	35,710 lbs.	17	17	102		
Wrought iron roof trusses	49,478 "			17,540 lbs.		
I beams	2,534 "	}	{	{	{	{
Brackets	543 "					
Bolts	13,719	\$2,115	\$2,115	66,274 lbs.		
Gravel roof	7,465 sq. ft.					
Zinc flashing	837 "	7,465 ft.	7,497 ft.	7,465 ft.		
Steam pipe	3,256 ft.	—	—	837 "		
Valves	15	—	—	{	{	{
Radiator	1	—	—			
Gas pipe	211 ft.			\$181.51		
				Plus 13%		

DYNAMO BUILDING.—CONTINUED.

	Sawin.	Kirkpatrick.	Ranger.	Main.	Manning.	Mason.
Gas burners	35					
Water pipe	211 ft.					
Valves	8					
1½-in. fire hose	250 ft.					
16-in. nozzles	5					
Cast-iron soil pipe	142 ft.					
Lead soil pipe	6 "					
Traps	5					
Galvanized iron leaders	154 ft.					
Sinks	3	\$157.00	\$150.00	\$230.00 +13%		
Water closet tank	1					
Water closets	3					
Wash bowl	1					
Urinal	1					
Elevator	1					
Traveller	1					
Whitening of walls			\$175.00	\$158.00 +13%		
Painting	3,770 sq. ft.	\$155.00				

STEAM ENGINE BUILDING.

COMPARATIVE SCHEDULE, ELECTRIC — W. E. SAWIN. 255

	Sawin.	Kirpatrick.	Ranger.	Main.	Manning.	Mason.
Excavation	2,424 yds.	2,177 yds.	1,822 yds.	2,424 yds.	1,493 yds.	2,551 yds.
Old stone wall taken down	184 "		84 yds.	216 yds.	302 yds.	
Gravel puddling	216 "	216 yds.	288 "	356 "	136 "	340 yds.
Backfill	356 "	300 "				
9-in. flaggors	724 sq. ft.		1,674 ft.	2,045 ft.	1,318 ft.	2,117 ft.
10-in. flaggors	1,321 "	1,700 ft.				
Brick	366,058	354,500	384,401	319,000	320,000	356,472
Red mortar	7,653 sq. ft.					
Granite door and window sills	41 cu. ft.					
Granite in engine foundation	513 "	\$1,194.00	\$1,194.00	\$1,058.00	392 cu. ft.	9,055 ft.
Southern pine timber	11,481 ft.	9,608 ft.	9,402 ft.	11,481 ft.	7,700 ft.	
3-in. spruce plank	13,752 "	13,700 "	13,008 "	13,700 "	13,410 "	
3-in. rock plank	18,436 "	18,400 "	15,348 "	18,400 "	16,262 "	17,161 "
1½-in. maple top floor	5,157 "	5,100 "	5,998 "	5,200 "	5,000 "	4,485 "
Southern pine finishing lumber	1,761 "	1,500 "	1,500 "	1,500 "	1,500 "	
Outside platform	1	1	1	1	1	
Windows and frames	18	18	18	18	18	
Doors and frames	3	4	4	4	4	
Cast iron	6,765 lbs.			3,040 lbs.	1,020 lbs.	
Bolts	4,085 "	\$665.00	\$665.00			
Iron roof trusses	16,400 "			12,000 "	12,000 "	
Slate	48 sqrs.	47½ sqrs.	46½ sqrs.	48 sqrs.	49 sqrs.	
Wire snow guards	1,716	—	—	\$20.00	\$20.00	
Zinc flashing	230 sq. ft.	—	—	\$10.00	\$10.00	
Galvanized iron gutter and leaders	104 ft. 6 in.	—		\$13.00	\$18.00	
Pipe railing	266 ft. 0 in.					
Gas pipe	174 ft.					
Burners	5					
Steam pipe	295 ft. 6 in.					
Valves	6					
Fire hose	100 ft.					
16-in. nozzles	2					
Water pipe	387 ft.					
Valves	4					
				\$171.70	\$171.70	

BOILER HOUSE.

	Sawls.	Kirkpatrick.	Ranger.	Meln.	Manning.	Mason.
Excavation	742 yds.	208 yds.	176 yds.	350 yds.	273 yds.	503 yds.
Gravel puddling	147 "	147 "	—	147 "	83 "	58 "
Backfill	145 "	22 "	22 yds.	100 "	100 "	
9-in. flangers	558 sq. ft.					
10-in. flangers	1,160 "	1,700 ft.	1,082 ft.	1,700 ft.	1,778 ft.	1,713 ft.
Brick	204,373	190,900	185,484	190,900	163,000	185,144
Brick paving	19,300	\$118.40	11,038	19,000	16,000	19,200
Red mortar	4,534 sq. ft.					
Cement coping	42 ft.	42 ft.	42 ft.	42 ft.		
Granite door and window sills	21 cu. ft.	\$46.00	\$46.00	21 cu. ft.	41 cu. ft.	
Southern pine timber	1,277 ft.	1,300 ft.	1,349 ft.	1,300 ft.	1,500 ft.	
3-in. roof plank	13,594 "	12,540 "	10,631 "	12,000 "	12,000 "	11,434 ft.
Pine finishing lumber	5,141 "		\$15.00	1,000 "	1,000 "	1,433 "
Clapboards	92 sq. ft.					
Iron roof trusses	19,350 lbs.		\$575.00	17,240 lbs.	11,972 lbs.	
Bolts	153 "					
Pipe railing	53 ft.					
Smoke pipe	3,071 lbs.					
Hangers	210 "					
Gravel roofing	2,878 sq. ft.	2,850 ft.	3,225 ft.	2,878 ft.	3,212 ft.	
Doors and frames	5	5	5	5	5	
Windows and frames	26	26	26	26	29	
Water pipe	859 ft.					
Valves	36					
Faucets	2					
Gas pipe	67 ft.					
Wrought iron pipe	30 "					
Globe valves	2					
Steam pipe	198 ft.					
Ls, Ts, reducers and valves	37					
Exhaust pipe	12 ft. 6 in.					
Galvanized iron hood	1					
Sink	1					
Water closet	1					
Felt pipe covering	740 1/2 sq. ft.					
				Plumbing, \$35.00	Plumbing, \$35.00	

CHIMNEY.

	Sawin.	Kirkpatrick.	Ranger.	Main.	Manning.	Mason.
Excavation	1,261 yds.	333 yds.	333 yds.	500 yds.	534 yds.	319 yds.
Gravel puddling	135 "	66 "	66 "	66 "	66 "	70 "
Backfill	945 "	90 "	207 "	328 "	300 "	
Spruce piles	121 "	121 "	121 "	121 "	121 "	
Flaggers	766 sq. ft.	766 ft.	765 ft.	766 ft.	756 ft.	
Stone work	168 yds.	165 yds.	168 yds.	168 yds.	170 yds.	
Brick	393,059	393,000	393,000	393,000	340,000	418,000
Iron door and frame	500 lbs.					
Ladder rungs	576 "	\$147.50	\$149.00	5,961 lbs.	6,100 lbs.	
Bolts	85 "					
Iron cap	4,800 "					

COAL BIN.

	Sawin.	Kirkpatrick.	Ranger.	Main.	Manning.	Mason.
Spruce dimension timber	2,500 ft.					
3-in. plank	6,000 "					
Labor on	8,500 "					

SEWERS.

	Sawin.	Kirkpatrick.	Ranger.	Main.	Manning.	Mason.
6-in. vit. pipe	511 ft.					
3-in. vit. pipe	56 "					
T's, Y's traps, quarter turns, etc.	6					
Catch basins	3					
Plans, engineer, and inspection						
Contingency						

[EXHIBIT 253.]

GAS WORKS, COMPARATIVE SCHEDULE.

OFFICE.

March, 1901.

	Walther.	Kirkpatrick.	Ranger.	Davis.	Mason.	Sawin.
Excavation	81 yds.	90 yds.	90 yds.	40 yds.	83 yds.	85 yds.
Backfill	17½ "	18 "	18 "	Stone, 7.11 yds.	17 "	18 "
Flaggers	166 sq. ft.	175 ft.	175 ft.	50 yds.	175 ft.	175 sq. ft.
Concrete	56 yds.	47 yds.	47 yds.	38,000	49 yds.	56 sq. yds.
Brick	39,150	39,000	39,000	—	—	38,646
Granite door sills	7.13 cu. ft.	—	—	—	—	Check
Brownstone steps	7.83 " "	—	—	—	—	"
" window sills and caps	20.52 " "	—	\$52.00	\$55.00	—	"
" door caps	2.79 " "	—	—	—	—	"
Slate hearth stones	4.88 sq. ft.	—	—	—	—	"
Spruce timber	2,641 ft.	\$6.00	\$6.00	—	—	"
Spruce lining floor	605 "	2,600 ft.	2,600 ft.	—	—	"
Southern pine top floor	686 "	600 "	600 "	—	—	"
Western pine roof boards	1,020 "	680 "	680 "	7,500 ft.	—	"
White wood sheathing	2,320 "	1,000 "	1,000 "	—	—	"
Thresholds	6	2,300 "	2,300 "	—	—	"
10-in. base boards	116 ft.	—	—	—	—	6
4-in. chair rail	100 lin. ft.	116 "	116 "	90 ft.	—	Check
Picture mould	100 "	100 "	100 "	—	—	"
Labor on	7,500 ft.	—	—	—	—	"
Doors	9	\$150.00	\$125.00	—	—	"
Windows and frames	8	8	8	9	—	8
6-in. moulded casings	442 lin. ft.	—	—	8	—	8
Window stools and aprons	8	—	—	—	—	Check
Inside blinds	8 sets	8	8	8	—	8
Locks	12	—	—	—	—	12
Bronzed door butts	14	—	—	Hardware, painting, and drain, \$105.00	—	14
Composition knobs	7	—	—	—	—	7
Brass lift plates	8	\$25.00	\$26.00	—	—	8
Brass safety catches	8	—	—	—	—	8

	8 sets.					8 sets.
Brass hinges and latches for blinds	4	—	—	—	—	4
Iron ventilators	1	—	—	—	—	1
Wash bowl with water connections	1	—	—	—	—	1
Water closet with water connections . . .	2	—	—	—	—	2
Fireplaces and mantels	2	—	—	—	—	2
Radiators with piping	1	—	—	—	—	1
Chandelier	3	—	—	—	—	3
Double wall burners	—	—	—	—	—	—
Painting	25 ft.	—	—	—	—	25 ft.
6-in. vit. drain pipe	8½ sqs.	—	—	—	—	8½ sqs.
Bangor slate	—	—	—	—	—	—
Inside finish	—	—	—	—	—	—

GASOMETER NO. 1.

	Walther.	Kirkpatrick.	Ranger.	Davis.	Mason.	Bawin.
Excavation	5,000 yds.	3,500 yds.	3,647 yds.	2651 yds.	3,535 yds.	5,058 yds.
Backfill	2,000 yds.	400 yds.	630 yds.	—	713 yds.	2,184 yds.
Brick	372,440	440,000	472,584	433,000	446,012	455,666
Stone platform, 8-in. granite	500 sq. ft.	—	—	300 ft.	—	505 sq. ft.
Brownstone window sills	8	—	—	8	—	8
Lumber	12,000 ft.	10,000 ft.	So. pine, 1,800 ft.	15,000 ft.	13,467 ft.	12,334 ft.
Labor on	18,000 ft.	\$175.00	Spruce, 11,260 ft.	—	—	18,392 ft.
Windows	8	8	—	8	—	8
Door	1	1	—	1	—	1
Roof boards	6,000 ft.	5,200 ft.	7,221 ft.	Included in 15,000 ft. lumber above	7,067 ft.	6,058 ft.
Slate	50 sqs.	43 sqs.	48½ sqs.	43 sqs.	50.48 sqs.	50 sqs.
Cast iron	1,000 lbs.	—	—	—	—	Check
Wrought iron	4,150 lbs.	\$104.25	\$18.75	—	—	Check
Cupola	—	\$100.00	\$75.00	—	—	—

GASOMETER NO. 2.

	Walther.	Kirkpatrick.	Ranger.	Davis.	Mason.	Savin.
Excavation	4,805 yds.	2,800 yds.	3,046 yds.	2,760 yds.	3,244 yds.	4,750 yds.
Backfill	2,292 "	600 "	778 "	—	1,027 "	2,154 "
Flaggers	622 sq. ft.	622 ft.	603 ft.	590 ft.	706 ft.	708 sq. ft.
Brick	634,756	630,000	622,888	730,000	635,568	Check
Brownstone coping	277 sq. ft.	277 ft.	277 ft.	275 ft.	—	Check
Brownstone door sill	1	}	}	}	}	}
Brownstone window sill	23					
Brownstone door cap	1	\$30.00	\$31.00	\$34.50	—	23
Dimension lumber	13,959 ft.	12,000 ft.	11,398 ft.	}	{	{
Western pine roof boards	8,120 "	7,700 "	10,780 "			
Labor on	22,079 "	\$300.00	\$250.00			
Outside door	1	1	1	—	—	1
Windows and frames	23	23	23	23	—	23
Windows in cupola	8	—	—	—	—	8
Finial	1	—	—	—	—	1
Hardware	—	\$30.00	\$25.00	—	—	—
Slate	66.75 sqrs.	63½ sqrs.	78½ sqrs.	66 sqrs.	68 sqrs.	67.75 sqrs.
Cast iron	55,831 lbs.	—	—	—	—	Check.
12 chains	2,000 "	—	—	—	—	"
12 weights	12,000 "	—	—	—	—	"
Bolts	1,707 "	{	{	{	{	{
6 truss ties	10,281 "					
Cupola	—	Iron work, \$45.00	Wrought iron, \$45.00	\$40.50	—	"
		\$150.00	\$75.00	Rods, 2,000 lbs.	—	"

EXHAUSTER, CONDENSING, WASH, AND PURIFYING.

	Walther.	Kirkpatrick.	Ranger.	Davis.	Mason.	Sawin.
Excavation	76½ yds.	700 yds.	906 yds.	888 yds.	813 yds.	78 yds.
Backfill	1,591½ "	135 "	55 "	—	131 "	1,620 "
Brick	353,352	275,000	290,392	250,000	270,792	349,102
Brownstone door sills	3	\$175.00	\$159.20	—	—	3
Brownstone door caps	3					3
Brownstone window sills	30					30
Brownstone window caps	32					32
Granite door sills	2	—	—	—	—	2
Granite door steps	5					5
Flaggers	16 sq. ft.					16 ft.
Spruce dimension timber	16,595 ft.					18,600 ft. So. pine,
Plank	6,361 "	2,000 ft.	6,107 "			
Sheathing	4,255 "	4,500 "	4,374 "			
Roof boards	6,811 "	7,200 "	6,960 "			
Labor on	33,912 "	\$300.00	\$275.00	—	7,312 "	34,044 "
Doors	7	57½ sqrs. \$15.00	\$188.15	{ 7	—	7
Windows	26					26
Slate	58 sqrs.					58 sqrs.
Hardware	—					58 sqrs.
Painting	—	\$50.00	\$35.00	—	—	Check
Tie rods	150 lbs.	—	—	—	—	"
Iron work	300 "	\$15.00	\$15.00	—	—	"
Wrought iron	10,060 "	—	—	—	—	"
Cast iron	792 "	—	—	—	—	1
Bath tub	1	—	—	—	—	2
Water closets	2	—	—	—	—	1
Sink	1	—	—	—	—	Check
6-in. vit. drain pipe	80 lin. ft.	—	—	—	—	—
Stone foundation	—	—	—	235 perch.	—	—

PASSAGEWAY.

	Walther.	Kirkpatrick.	Ranger.	Davis.	Mason.	Sawin.
Excavation	11 yds.	11 yds.	13 yds.	\$3.00	—	Check.
Backfill	7½ "	8 "	9 "	—	—	Check.
Brick	13,770	12,500	14,593	14,000	—	13,908
Granite door sills	2	2	2	—	—	2
Brownstone door caps	2	2	2	—	—	2
Brownstone window sills	2	2	2	—	—	2
Brownstone window caps	2	2	2	—	—	2
Spruce dimension timber	420 ft.	420 ft.	377 ft.	{ Carpenter	}	420 ft.
Plank	515 "	515 "	264 "	{ work, \$35.00.		500 "
Doors	2	2	2	—		2
Windows and frames	2	2	2	—	—	2
Tar and gravel roof	197 sq. ft.	200 ft.	180 ft.	—	—	197 ft.
Painting	—	\$5.00	\$5.00	—	—	—
Hardware	—	\$4.00	\$4.00	—	—	—
Labor and nails	—	\$30.00	\$20.00	—	—	—
Roof boards	—	—	225 ft.	13 perch.	—	—
Stone foundation	—	—	—	\$16.00	—	—
Slate	—	—	—	—	—	—

BLACKSMITH SHOP.

	Walther.	Kirkpatrick.	Ranger.	Davis.	Mason.	Sawin.
Excavation	16 yds.	16 yds.	24 yds.	24 yds.	16 yds.	Check
Backfill	104 "	10 "	14 "	—	10 "	Check
Brick	17,832	21,000	19,436	20,000	19,824	19,122
Granite door sill	1	} \$22.00	\$21.65	—	—	1
Brownstone window sills	4			—	—	4
Brownstone window caps	4			—	—	4
Brownstone door caps	1	500 ft.	414 ft.	—	—	1
Spruce dimension timber	489 ft.	600 "	639 "	—	—	490 ft.
Roof boards	586 "	\$25.00	\$20.00	—	—	584 "
Labor on	1,075 "			—	—	1,074 "
Doors	1	1	1	1	—	1
Windows	4	4	4	4	—	4
Tar and gravel roof	488 sq. ft.	448 ft.	511 ft.	500 ft.	—	486 sq. ft.
Wooden bench	1	—	—	—	—	1
Forge and bellows	1	—	—	—	—	1
Anvil	1	—	—	—	—	1
Pipe rack	1	—	—	—	—	1
Hardware	—	—	—	—	—	—
Painting	—	\$5.00	\$4.00	—	—	—
Flaggers	—	\$4.00	\$5.00	—	—	—
Stone foundation	—	—	150 sq. ft.	—	174 sq. ft.	—
Sundries	—	—	—	16 perch. \$63.00	—	—

PIPE SHOP, STATION AND HOUSE METER ROOM, LIME ROOM.

	Walther.	Kirtpatrick.	Ranger.	Davis.	Mason.	Sawla.
Excavation	182½ yds.	657 yds.	542 yds.	480 yds.	715 yds.	185 yds.
Backfill	621 "	102 "	104 "	—	143 "	624 "
Brick	228,840	173,000	181,372	126,000	187,496	226,358
Brick paving	564 sq. yds.	564 yds.	2,116	—	56	564 yds.
Flaggings	231 sq. ft.	—	665 sq. ft.	—	1,021 ft.	230 sq. ft.
Brownstone steps	3	} \$150.00	\$150.00	—	—	} 3
" door caps	3					
" window sills	19					
" window caps	22					
" coping	2	} 19,000 ft.	8,519 ft.	—	10,445 ft.	10,595 ft.
"	6					
Granite steps	3					
" door sills	3					
Spruce dimension timber	10,548 ft.	19,000 ft.	8,519 ft.	—	10,445 ft.	10,595 ft.
Roof boards	3,864 "	—	—	20,000 ft.	4,060 "	3,868 "
Floor plank	4,749 "	1,530 ft.	4,415 ft.	—	4,455 "	4,732 "
Labor on	20,343 "	\$225.00	\$220.00	—	—	19,245 "
Doors	6	6	6	8	—	6
Windows	19	19	19	28	—	19
Slate	32.16 sqs.	31½ sqs.	32½ sqs.	33 sqs.	33.6 sqs.	32½ sqs.
Sheathing	1,182 ft.	1,200 ft.	1,215 ft.	—	—	1,181 ft.
Painting	—	\$40.00	\$30.00	—	—	—
Hardware	—	\$15.00	\$12.00	—	—	—
Stone foundation	—	—	—	135 perch.	—	—

VALVE ROOM AND WATER GAS METER ROOM.

	Walther.	Kirkpatrick.	Ranger.	Devia.	Mason.	Sawin.
Excavation	17½ yds.	356 yds.	247 yds.	24 yds.	247 yds.	18 yds.
Backfill	142 "	13 "	62 "	—	63 "	142 "
Brick	92,616	74,000	75,584	65,000	79,176	90,531
Flaggers	87½ sq. ft.	88 ft.	325 ft.	—	330 ft.	87.5 ft.
Granite door sill	1					1
Brownstone door sill	1					1
" door steps	2					2
" window sills	9					9
" window caps	8					8
" door caps	2					2
Spruce dimension timber	312 ft.					
Southern pine timber	1,816 "	310 ft.	2,049 ft.			443 ft.
3-in. spruce floor plank	5,263 "	1,800 "	818 "			1,875 "
Maple top floor	1,049 "	5,300 "	4,380 "	8,000 ft.		5,238 "
Labor on	8,440 "	1,050 "	1,092 "			1,050 "
Doors	2	\$90.00	\$85.00	—	—	8,606 "
Windows	9	2	2	1	—	2
Fine sheathing	134 ft.	9	9	6	—	9
Iron rods and washers	29 lbs.	\$25.00	\$20.00	—	—	134 ft.
Slate	5.88 sqs.	—	\$0.60	—	—	30 lbs.
Copper bath tub	1	5½ sqs.	5.60 sqs.	6 sqs.	—	5.88 sqs.
Radiator	1	—	—	—	—	1
Plumbing and steam piping						
Gravel roof	—	150 ft.	196 sq. ft.	—	—	—
Painting	—	\$10.00	\$8.00	—	—	—
Hardware	—	\$9.00	\$10.00	—	—	—
Stone foundation	—	—	—	40 perch.	—	—

RETORT HOUSE.

	Walther.	Kirpatrick.	Ranger.	Davis.	Mason.	Sawin.
Excavation	725 yds.	513 yds.	448 yds.	240 yds.	890 yds.	726 yds.
Gravel puddling	105 "	85 "	104 "	—	217 "	102 "
Backfill	1,534 "	45 "	112 "	—	590 "	254 "
Flaggers	1,142 ft.	1,134 ft.	612 ft.	—	1,470 ft.	1,138 ft.
Bluestone flooring	2,282 "	1,080 "	2,050 "	1,080 ft.	2,345 "	2,295 sq. ft.
Brick	203,088	203,000	194,590	210,000	375,888	203,573
Granite door sills	5					5
Brownstone door caps	5	\$167.45	\$176.21	—	—	5
Brownstone window sills	10			—	—	10
Brownstone window caps	16			—	—	16
Iron trusses	36,788 lbs.			40,000 lbs.	—	Check.
C. I. wall boxes	2,340 "			—	—	"
W. I. chimney support, etc.	2,859 "	\$1,240.00	\$1,240.00	—	—	"
W. I. shutter blinds	3,776 "			\$120.00	—	"
Sliding doors	5			4	—	5
Windows	16	16	16	17	—	16
Slate	53 sqrs.	53 sqrs.	56½ sqrs.	53 sqrs.	—	57.38 sqrs.
Painting	—	\$20.00	\$15.00	—	100.8 sqrs.	—
Hardware	—	\$15.00	\$16.00	—	—	—
Labor and nails	—	\$25.00	\$50.00	—	—	—
Stone foundation	—	—	—	140 perch.	—	—

Mason has lumped his Retort House, Water Gas Plant building, and Engine Room estimates together, and has put in the following:—

10 Areas in Retort House.		Engine Bld.		Boiler Foundations.	
Excavating	111 yds.	Excavation	6 yds.	Excavation	15 yds.
Backfill	40 "	Brick	4,104	Flaggers	289 ft.
Brick	19,184			Brick	6,000

WATER GAS PLANT ROOM.

	Weather.	Kirtpatrick.	Ranger.	Davis.	Mason.	Sawin.
Excavation	253½ yds.	180 yds.	224 yds.	96 yds.	—	258 yds.
Gravel puddling	100 "	100 "	112 "	—	—	101 "
Backfill	91	60 "	79 "	—	—	108 "
Flaggers	489 sq. ft.	483 ft.	574 ft.	450 ft.	—	489 sq. ft.
Concrete	20½ yds.	—	—	\$80.00	—	22.22 yds.
Brick	126,624	126,000	143,016	235,000	—	142,261
Granite door sills	3	}	\$173.80	—	}	3
Brownstone door caps	3			—		3
Brownstone window sills	21	}	16,768	2,420 ft.	}	21
Brownstone window caps	21			—		21
Brick paving	314 sq. yds.	22,000	—	—	26,592	316 sq. yds.
Wrought iron	5,993 lbs.	}	\$460.00	—	}	Check
Cast iron	14,588 "			—		"
1-in. pipe railing150 lin. ft.	}	—	22,000 lbs.	}	"
Iron trusses	23,609 lbs.			—		"
Doors	4	4	4	4	—	4
Windows	21	21	21	21	—	21
Slatting	39 sqrs.	39 sqrs.	41½ sqrs.	39 sqrs.	—	41.3 sqrs.
Painting	—	\$25.00	\$30.00	—	(See Mason	—
Hardware	—	\$20.00	\$20.00	—	notes on pre-	—
Labor and nails	—	\$30.00	\$50.00	50 perch.	vious page.)	—
Stone	—	—	—	—	—	—

STEAM ENGINE ROOM IN WATER GAS PLANT.

	Walther.	Kirkpatrick.	Ranger.	Davis.	Mason.	Sawin.
Excavation	74½ yds.	30 yds.	150 yds.	40 yds.	—	80 yds.
Gravel puddling	32½ "	—	19 "	—	—	37 "
Rackfill	31½ "	10 yds.	21 "	—	—	27 "
Flaggers	172 sq. ft.	170 ft.	18 ft.	165 ft.	—	170 sq. ft.
Brick	33,600.	33,600	27,436	30,000	—	33,677
Granite engine bed	1	}	\$75.00	{	—	1
Granite door sill	1					1
Brownstone cap	6					6
Brownstone window sills	6	{	4,100	450 ft.	—	57½ sq. yds.
Brownstone window caps	6					6
Brick paving	57½ sq. yds.	{	So. pine, 1,000 ft.	—	1,100 ft.	832 ft.
Spruce dimension timber	924 ft.					787 "
Roof boards	774 "	800 "	853 "	—	839 "	1,619 "
Labor on	1,698 "	\$22.00	\$22.00	—	—	6
Door	1	1	1	1	—	1
Windows	6	6	6	6	—	6
Tar and gravel roof	645 sq. ft.	645 ft.	682 ft.	\$150.00	671 ft.	656 sq. ft.
Radiator	1	—	—	—	—	1
Painting	—	\$10.00	\$7.00	—	(See Mason	notes on pre-
Hardware	—	\$8.00	\$8.00	—	vious page.)	

COAL SHED.

	Walther.	Kirpatrick.	Ranger.	Davis.	Mason.	Sawin.
Excavation	747 yds.	500 yds.	285 yds.	272 yds.	661 yds.	733 cu. yds.
Backfilling	223 "	100 "	118 "	—	245 "	269 "
Puddling	185 "	—	—	—	175 "	102 "
Flaggers	1,189 sq. ft.	1,120 ft.	1,130 ft.	850 ft.	1,188 ft.	1,197 sq. ft.
Concrete	685 sq. yds.	—	—	6,923 sq. ft.	5,720 "	651 sq. yds.
Brickwork	285,024	269,000	259,856	257,000	287,328	277,922
Brownstone sills	4	—	—	—	—	{ 4
Brownstone caps	4	\$12.00	\$14.00	—	—	{ 4
Spruce dimension timber	21,158 ft.	23,500 ft.	17,631 ft.	—	21,369 ft.	22,622 ft.
Spruce roof boards	11,825 "	11,800 "	11,456 "	—	10,395 "	11,157 "
Spruce plank	1,318 "	1,300 "	1,300 "	—	1,240 "	1,344 "
Labor and nails on	34,301 "	\$350.00	\$350.00	—	—	35,123 "
Windows	7	7	7	7	—	7
Doors	2	2	2	2	—	2
Cornice mould	130 lin. ft.	—	—	—	—	{ 130 ft.
Face boards	138 ft.	\$71.30	\$45.00	—	—	{ 138 "
Chapboards	1,803 "	—	2,130 ft.	—	1,611 ft.	{ 1,812 "
Shingles	3,403 "	\$160.00	35 bunches	—	3,436 "	{ 3,479 "
Tar and gravel	3,413 "	4,080 ft.	4,018 ft.	—	3,840 "	{ 800 lbs.
Wrought iron	805 lbs.	\$10.00	\$10.00	—	—	
Painting	—	\$40.00	\$40.00	—	—	
Stone	—	—	—	110 perch.	—	
Roofing	—	—	—	7,000 ft.	—	

STORE SHED, No. 1.

	Walther.	Kirkpatrick.	Ranger.	Davis.	Mason.	Sawin.
Excavation	44½ yds.	45 yds.	45 yds.	32 yds.	49 yds.	44½ yds.
Backfill	37 "	—	—	—	37 "	33 "
Flangers	400 sq. ft.	240 ft.	240 ft.	—	277 ft.	400 sq. ft.
Concrete	280 sq. yds.	200 yds.	200 yds.	—	2,440 "	271 sq. yds.
Spruce dimension timber	6,303 ft.	5,600 ft.	5,600 ft.	1,600 ft.	6,080 "	6,648 ft.
Hemlock boards	5,203 "	3,000 "	3,000 "	8,000 ft.	6,137 "	5,537 "
Spruce boards	1,254 "	1,000 "	1,000 "	—	—	1,085 "
Labor and nails on	12,820 "	\$100.00	\$100.00	—	—	13,250 "
Shingles	2,772 sq. ft.	\$100.00	\$102.00	\$80.00	2,796 "	2,790 sq. ft.
Stone	—	—	—	15 perch.	—	—

TANKS, Nos. 1, 2, 3, 4, 5.

	Walther.	Kirkpatrick.	Ranger.	Davis.	Mason.	Sawin.
Excavation	3,470 yds.	1,704 yds.	2,205 yds.	—	2,631 yds.	3,518 yds.
Pudding	1,202 "	75 "	—	—	—	1,225 "
Backfill	1,109 "	562 "	1,054 "	—	1,328 yds.	1,465 "
Concrete	151½ "	153 "	127 "	—	154 "	151½ "
Brickwork	220,872	224,000	238,324	—	229,296	228,056
Flangers	64 sq. ft.	—	100 ft.	—	—	64 ft.
Iron	250 lbs.	\$4.50	\$5.00	—	—	250 lbs.
Plank	3,240 ft.	4,250 ft.	4,881 ft.	—	4,055 ft.	3,540 ft.
Centres	—	—	\$48.00	—	—	—

TANKS, Nos. 6, 7, 8.

	Walther.	Kirkpatrick.	Ranger.	Davis.	Mason.	Sawin.
Iron	2,400 lbs.	—	—	—	—	—

COMPARATIVE SCHEDULE OF GASOMETER NO. 3 (BRIDGE STREET HOLDER).

March, 1901.

W. E. SAWIN.

	Sawin.	Kirkpatrick.	Ranger.	Devis.	Mason.
Excavation	10,249 yds.	6,265 yds.	6,129 yds.	6,208 yds.	7,137 yds.
Backfill	4,382 "	3,380 "	863 "	—	1,431 "
Flaggers	1,260 sq. ft.	960 ft.	1,071 "	—	1,261 ft.
Brick	1,049,530	988,000	999,042	608,000	1,052,000
Stone coping	204 cu. ft.	—	—	525 ft.	
Stone pier caps (granite)	351 "	—	—	\$76.80	
Door sills (granite)	9.32 "	\$500.00	\$508.00		
Window and door sills (brownstone)	46.78 "				
Southern pine timber	1,620 ft.	1,620 ft.	2,950 ft.	—	18,094 ft.
Native pine timber	23,705 "	22,400 "	15,134 "	40,000 ft.	
Native pine lumber	783 "	800 "	800 "	—	14,910 ft.
Pine roof boards	15,637 "	15,600 "	14,886 "		
3-in. chest plank	4,886 "	5,000 "	5,432 "		
Labor on	51,000 "	—	\$400.00		
Fence (posts and plank)	3,064 "	538 ft.	538 ft.	\$250.00	
Fence (pine lumber)	4,410 "	108 sqs.	107½ sqs.	110 sqs.	106 sqs.
Slate and flashing	111 sqs.	35 screens	35 screens	35	
Wire screen	485 sq. ft.	35	35	2	
Windows and frames	35	2	2		
Doors and frames	17,732 lbs.				
Wrought iron trusses	88,173 "				
Cast iron columns, weights, etc.	2,153 "				
23-in. chain pulleys	272 ft.				
½-in. chain	9,052 lbs.				
Bolts and rods	4,320 "			2,800 lbs.	
Railroad iron	—			\$60.00	
Painting	85 ft.		\$40.00		
Sewer pipe	70 "				
1-in. water pipe					

Q. Mr. Sawin, did you go over the figures of quantities that you have already testified to previously at the Bridge Street gasometer? A. I did.

Q. Did you find any variance in the figures previously given by you, and, if so, what variance and where is it and how is it occasioned? A. At the Bridge Street gasometer I checked my figures in all cases excepting one. That was the item of cast iron columns. The second time, in my calculation, in going over the work, I had the column bored.

Q. I beg pardon? A. Bored a hole in the column to get the thickness of it, and found it was inch iron; and, according to my previous figures, I had used a measurement I got at the top, and there must have been a swell. In fact, there was a swell at the top of the column, which gave me a 2-inch thickness.

Q. What do you mean by a swell at the top of the column? A. The top of a column had a sort of ornament on top, which made a swell, increasing the thickness; and, when I measured the top of it, I got it two inches thick instead of an inch, which is the proper thickness. It changes my figures from 151,500 to 88,173 of cast iron. Other than that I checked them all.

Q. With that one exception, all the quantities that you have testified to you found to be correct? A. I did.

Q. Mr. Sawin, at my request did you go over the books of the Holyoke Water Power Company to determine the amount of legal expenses paid by the gas department and by the electric light department of the Holyoke Water Power Company? A. I did.

Q. And in the gas department how far did you go back? A. 1861.

Q. And from 1861 down to and including 1898? A. 1900.

Q. Down to and including 1900? A. Yes, sir.

Q. You found what the amount expended by the Holyoke Water Power Company for legal expenses at the gas plant was? A. Yes, sir.

Q. And what is that amount expended for legal expenses from 1861 down to the present time?

Mr. MATTHEWS. Wait a moment. I object. If the question is material, the books themselves should be produced.

Mr. BROOKS. Mr. Matthews, do you really mean that, in view of all the testimony that we have allowed you to put in?

Mr. MATTHEWS. Possibly I do not. My point is this, that we do not particularly care for the production of the books themselves, but we would like to make a few inquiries of the witness before he testifies. May I do so, Mr. Chairman?

The CHAIRMAN. Yes.

By Mr. MATTHEWS.

Q. What accounts did you find these items charged to, if any? A. Gas works, gas department.

Q. The Company keeps another account of legal expenses, doesn't it,—general legal expenses? A. Keep one against each department.

Q. They keep a general account, too, don't they? A. I don't know as to that.

Q. You don't know? A. They have one against each department.

Q. What, for legal expenses? A. For any expenses.

Q. Don't they have a general account for legal expenses, for all the work done for the Company? A. That I couldn't say.

Q. You didn't inquire into that? A. No, sir.

Q. Weren't you asked to? A. No, sir.

Q. Didn't Mr. Brooks ask you to get all the legal expenses you could? A. Against the gas works.

Q. All you took, then, was the amount of legal expense, if any, charged up to these gas works? A. Yes, sir.

Q. And if, as a matter of fact, counsel were employed for matters connected with the gas plant, and it appeared in a general account,—his charges appeared in a general account for legal expenses,—you didn't take any account of it? A. It wouldn't appear in any general account.

Q. Why? A. It would appear against the gas department.

Q. How do you know it would? A. I know it would.

Q. Suppose a man is employed at a salary of \$5,000 a year,

what would that be charged to? A. Apportioned, any part of it, on the gas department—that part would be apportioned to it.

Q. Do you keep books yourself? A. No, sir.

Q. Are you a book-keeper? A. No, sir.

Q. Are you an accountant? A. No, sir.

Mr. MATTHEWS. Now, if your Honors please, the difficulty with this witness is this, that what he is doing is not simply quoting from the books. I haven't any objection to what is in the books going in through him or anybody else; but he is attempting to pass an opinion as to whether or not certain charges were proper charges against the gas plant, and yet he admits he is not a book-keeper or an accountant. Mr. Foster was the one who ought to have testified to this.

Mr. BROOKS. I do not agree with my friend's conclusion at all. I am asking this gentleman what he finds to be the legal expenses charged up to the gas plant and to the electric light plant from the books of the Company.

Mr. COTTER. He can state only what appears on the books.

Mr. BROOKS. Certainly not. They do not make that objection—that the books are not here.

Mr. MATTHEWS. I think we do, in view of the fact that this witness is not a book-keeper or an accountant. I thought he was at first.

Mr. COTTER. That is what I understand the objection to be, that he is not a book-keeper.

Mr. BROOKS. He is not a book-keeper. Of course, we cannot have the book-keeper here from 1861, because there have been several, I suppose.

Mr. COTTER. If that comes from anybody, it would more properly come from the custodian of the books.

Mr. GREEN. I understand Mr. Reuben Winchester is here.

Mr. BROOKS. Mr. Winchester is not the book-keeper. Mr. Stapleton is the book-keeper. Do you want us to produce the books from 1861 on?

Mr. COTTER. The custodian, the one who has custody of the books, the book-keeper, if objection is made,—it seems to me it would be more regular coming from him than coming from this gentleman, who merely looked at them.

Mr. BROOKS. I would like to ask another question.

By Mr. BROOKS.

Q. Mr. Sawin, did you go over the books? A. I did.

Q. Of the gas department, from 1861 down, with the book-keeper of the Company? A. I did.

Q. And did you find, from 1861 down, all the charges to legal expenses for the gas department of the Holyoke Water Power Company?

Mr. MATTHEWS. I object.

Q. As contained upon the books of the Company?

Mr. MATTHEWS. I object, because the answer to that question involves an expression of opinion as a book-keeper or accountant; and this witness is neither.

Mr. BROOKS. It does not involve an expression of opinion: it involves simply the expression of a fact.

Mr. COTTER. It seems to me, Mr. Brooks, that there is better evidence than that which you offer.

Mr. BROOKS. Very well. Do you say you must have the books here?

Mr. MATTHEWS. I should think so.

Mr. BROOKS. Then we should ask the Court to come up to Holyoke.

Mr. MATTHEWS. I suppose we shall have to go there again, anyway.

The CHAIRMAN. I do not understand that Mr. Matthews objects to it. It seems to me, Mr. Matthews, if you raise this objection, he has been over these books, and is as capable of testifying as anybody else. Why not let him testify?

Mr. MATTHEWS. I will let Mr. Brooks put it in, if he wants to, without any witness,—put in a transcript of all charges that appear on the gas works against the gas plant for legal services. Now, Mr. Brooks, you can put it in.

Mr. BROOKS. I ask to put it in by Mr. Sawin; if the technical objection goes, I can put it in.

Mr. MATTHEWS. What we object to is a characterization by this witness that they were all the charges for legal expenses proper to be made against the gas plant. That is what we object to. Now we make this square offer. If Mr. Brooks has in this court room to-day a piece of paper which purports to contain upon its face a memorandum of the charges for legal services specifically made by the Holyoke Water Power Company against the gas plant, we say he can put it in for that purpose, subject, of course, to verification by us.

Mr. GOULDING. Will you take Mr. Brooks's statement that that is all the entries there are?

Mr. BROOKS. I cannot state, because I don't know anything about it.

Mr. MATTHEWS. Of course, it would open the door for us to show that there were other charges, other general legal charges, of course.

The CHAIRMAN. Yes.

Mr. BROOKS. I hold in my hand, may it please your Honors, a tabulation which purports to be a tabulation of legal expenses paid at the gas works from 1861 down to and including 1900. Before 1876, which is the first year that appears upon this schedule, there were no legal expenses for the gas department.

Mr. MATTHEWS. Before you quote from the paper, will you let us see it, please?

Mr. BROOKS. Yes. And before the year 1888 there were no legal expenses paid by the Holyoke Water Power Company for or on account of the electric plant.

Mr. MATTHEWS. They didn't buy it until 1887.

Mr. BROOKS. Well, I say before 1888. My statement still remains true.

Mr. MATTHEWS. I think we are both right. (Paper handed to counsel for the City.) Mr. Brooks, who is the book-keeper?

Mr. BROOKS. Mr. Stapleton. It is rather difficult for us to have him away for a day or two.

Mr. MATTHEWS. Will you have Mr. Stapleton present at some convenient date, when the Commission shall be in Holyoke or Springfield, for the purpose of explaining this paper?

Mr. BROOKS. Yes, I am perfectly willing. This was done as a matter of convenience, because your Honors can see that the book-keeper's presence is necessary at the office.

Mr. MATTHEWS. I seem to have difficulty in making my point clear. It appears that this corporation paid somebody a salary for legal services. That is not here.

Mr. BROOKS. Oh, no.

Mr. MATTHEWS. That is not here at all. They paid \$5,000, for instance, to one man, who was a lawyer. They had a large amount of other legal expenses.

Mr. BROOKS. Do you mean it has appeared in evidence that the Holyoke Water Power Company ever paid a salary for legal expenses?

Mr. MATTHEWS. Yes, I think it has.

Mr. BROOKS. I think not.

Mr. MATTHEWS. I want to ascertain about that, but I have no objection to this paper going in for what it is worth; that is, as a statement of the expenses paid for claims and legal fees, and charged to the gas works upon the Company's books from 1861 to 1900, and the same for the electric light plant, subject to verification by us and to the production of Mr. Stapleton, the book-keeper.

Mr. BROOKS. Very well. I will leave that for the present, and I will try to get Mr. Stapleton here in some way.

Mr. MATTHEWS. Very well.

Mr. BROOKS. We shall have to defer the presence of Mr. Stapleton until next week, because he will be engaged in paying off all this week, as I am informed.

Q. There was a certain lot of plans, I think two in number, that were marked for identification, as appears in Vol. VIII. of the testimony, and I want those to go in. Have you those here? A. The City lot?

Q. Yes. A. Yes, sir.

Mr. BROOKS. They were marked 62 and 63, I think, for identification.

Q. This plan that is marked for identification, November 21, that you now exhibit, is what? A. A map of the so-called City lot in Holyoke, bounded by Hancock, Berkshire, and Race Streets.

Q. Is that the lot upon which Mr. Davis erected his ideal plant? A. Yes, sir.

Q. And what does this map show with reference to any of the features of the lot? A. Well, it shows the Union Basin, with the 10-foot sewer running diagonally across the lot, an iron trunk sewer going into the Union Basin, with an open way for surface drainage, also the Front Street sewer, which is 5 feet 8 inches in diameter, running parallel across the lot to the other one. It also shows it topographically, the elevations partially, and where there isn't any it is practically level; that is, where there is an elevation at one point, it is practically level to the next elevation in any direction.

Q. What is this apparent sunburst down in this corner? What does that represent? A. That is a pile of earth that the City, at the time of the excavation for the sewers and so on, had left piled up there.

Q. Does this plan show how near to the surface of the earth the sewers are? A. No, sir, but I have a profile here.

Mr. BROOKS. I would like to have that plan marked.

(Map of lot of land owned by City of Holyoke, bounded by Berkshire, Hancock, and Race Streets, marked "Exhibit 255, W. L. H.")

Q. Have you drawn a plan showing how near to the surface of the earth the sewers are that run across this so-called City lot? A. Yes, sir.

Q. What is that plan entitled? A. "Profile of ground over centre line of main trunk sewer, 10-foot diameter, from Union Basin across City lot, bounded by Race, Berkshire, and Hancock Streets."

Q. That was also marked for identification. A. I think not, Mr. Brooks. It was a section.

Mr. BROOKS. Very well.

By Mr. COTTER.

Q. What is the depth of the sewer, Mr. Sawin? You may have stated. A. The elevations are given on top of the sewer, and the sewer is 10 feet inside diameter, with a 12-inch ring.

By Mr. BROOKS.

Q. And this plan shows, does it, the distance from the surface of the earth to the nearest surface of the sewer? A. Yes, sir. It gives the elevation of the top of the sewer and the elevation of the ground, and then right up here is the difference, 3 foot 6 of earth.

Q. Now will you be good enough to state how near the surface of the earth this sewer is laid? A. Commencing at the centre of the Union Basin, at station O, and then running along the sewer, the 10-foot sewer, 63 feet, is 4 feet $2\frac{3}{8}$ inches of earth on top of the sewer. Then the next station, 50 feet more, 3 foot 9. Then 50 feet more, 3 foot 6; and 50 feet more, 2 foot $2\frac{3}{8}$; 50 feet more, 3 feet; 50 feet more, 2 foot 6; and 50 feet more, 2 feet. That takes you almost down to Race Street.

(Profile of ground over centre line of main trunk sewer, marked "Exhibit 256, W. L. H.")

Q. Now there is another plan drawn by you that was marked for identification? A. Yes, sir.

Q. And what does that drawing represent? A. It is a section of the sewer, the 10-foot sewer.

Q. It runs across the so-called City lot? A. Yes, sir.

Q. Will you exhibit that to the Commission, and explain it so far as you consider it needs explanation?

Mr. GREEN. Is this anything more than something he has copied?

The WITNESS. This is drawn from the original drawing that the sewer is built by.

Mr. GREEN. It is a copy — something you copied?

The WITNESS. Copied in the City Engineer's office.

Mr. GREEN. All you know about it is what is shown by the copy?

The WITNESS. Yes, sir. The drawing that is copied from has the signature of W. E. McClintock, approved, in his own writing.

Q. Who is W. E. McClintock? A. Consulting engineer on the job for the City of Holyoke.

Q. W. E. McClintock of Boston? A. Yes, sir.

Q. The present head, I think, of the State Highway Commission. Now be kind enough to explain that? A. This is a transverse section of that 10-foot sewer across the City lot. The foundations are all on piling, and puddled gravel in between to quite a depth, I don't know how far. The drawing showed down as far as this goes. There are 4-inch plank on top of the 12 x 12 timbers, and masonry walls 5 foot 8 high, filled in between with concrete, with a 12-inch ring.

Q. Is there anything that you desire to say further in explanation of that plan? A. No, sir, I don't think there is. I think the Commission understand it.

(Plan of section of sewer from South Street to Connecticut River, marked "Exhibit 257, W. L. H.")

Q. When Mr. Dennis Landers did the work that he performed in the building of any part of the electric lighting plant, hydraulic or otherwise, what plan did he use?

Mr. MATTHEWS. Does this witness know?

Mr. BROOKS. Yes. If he doesn't, he can say so.

Mr. MATTHEWS. Do you know what plan he used?

The WITNESS. Yes, sir.

Mr. MATTHEWS. Well, it is not important enough to object to.

Q. Now what plan did he use? A. He used the plan that the blue print in this case is made from, of the wheel pit and tailrace.

Q. What is the office of the brick arches over the testing flume penstock? A. In the tunnels?

Q. Yes. A. Merely to carry the side walls of the tunnel over the penstock.

Q. You mean the tunnel through which the shafting runs at the electric light plant? A. Yes, sir.

Q. Have you got a plan here of that—showing that? (Plan produced.) You are now about to show a plan already introduced in the case? A. Yes, sir.

By Mr. COTTER.

Q. What exhibit is that, Mr. Sawin? A. Exhibit 1+.

By Mr. BROOKS.

Q. Mr. Sawin, will you take this plan, which is marked Exhibit 1+, and show to the Commission the office of that wall,—the arch? A. In transverse section here are the side walls shown. There is shown the penstock. These walls are necessarily arched over, as shown in this longitudinal section of the same thing. The walls run down below the penstock on each side and are arched over. Then they rise up to that elevation there, running right along, as shown in these two. The arch is merely the width of the wall, 16 inches, not the whole width of the tunnel.

Q. After Mr. Kirkpatrick's testimony, did you have any conversation with him relative to this arch? A. I did.

Q. And to the office it performed? A. Yes, sir.

Q. Will you be kind enough to state what the conversation was?

Mr. MATTHEWS. I object.

Mr. COTTER. What is the ground of the objection, Mr. Matthews?

Mr. MATTHEWS. Is this for the purpose of contradicting Mr. Kirkpatrick?

Mr. BROOKS. Oh, certainly. The purpose is to show that, if you want to know what I intend—

Mr. MATTHEWS. No. I thought the Commission ruled earlier in the case that we could not contradict a witness for the other side by showing what he had said on some other occasion.

Mr. BROOKS. I never have heard of any such ruling.

Mr. COTTER. I do not recollect that, if a witness made at any time statements inconsistent with his statement on the stand.

Mr. MATTHEWS. I offered an article written by one of their witnesses which was widely inconsistent with his testimony in this case.

The CHAIRMAN. But the part that was inconsistent you were allowed to read. We did not allow the article to go in.

Mr. MATTHEWS. The line drawn was simply the part that was inconsistent and not the whole.

The CHAIRMAN. As I remember it.

Mr. MATTHEWS. I thought the ruling of the Commission was that I could call the attention of the witness to some particular thing, but could not put the article in itself for the purpose of contradicting him. It seemed to me I ought to have been permitted to put the article in.

Mr. BROOKS. I do not offer here all the talk between him and Mr. Kirkpatrick. I point out a definite thing.

Mr. MATTHEWS. The whole of this article was on the subject of depreciation. It was Mr. Foster's article, and that was what he was testifying to in this case.

Mr. COTTER. We felt there was only one part inconsistent and contradictory of his evidence. We allowed that to go in.

Mr. MATTHEWS. I do not understand how the Commission could have ruled that way, because they didn't see it.

Mr. COTTER. We think we allowed you to quote certain passages in it.

Mr. MATTHEWS. Yes, but the article was excluded, and we took an exception.

Mr. COTTER. Well, we think there is authority in support of our position there, when you refer to an article, that part of it may be introduced and not the whole,—the part that is contradictory,—admitting a part of it, and not necessarily the whole.

Mr. MATTHEWS. Go ahead, Mr. Brooks.

Q. What was the conversation between you and Mr. Kirkpatrick, after he had given his testimony in this case, with reference to this arch and its office and function? A. Well, he came to me at noontime, after giving his testimony, and

said he understood that the arch extended the whole width of the tunnels, covering the penstock and a protection for the penstock. I told him it wasn't so, that the arches were merely the width of the wall, the thickness of the wall, in order to carry the wall over.

Q. What did he say in reply to that? A. Well, he said: "I am mistaken, then. I understood it the other way."

Q. And is that substantially all the conversation you had relative to this subject? A. Yes, sir.

Q. Have you prepared a sketch showing the slope angles that Mr. Kirkpatrick testified to? A. In connection with my own slope angles?

Q. Yes. A. On the heavy cuts.

Q. You have that sketch? A. Yes, sir.

Q. Will you explain to the Commission the sketch and its nature, its object? A. This is a section —

Mr. MATTHEWS. Referring to the one —

The WITNESS. On the right hand side. The one on the right hand side is a section of the No. 3 holder, showing the tank and a part of the building wall. The one in the middle, the No. 2 holder — the one at the left hand is No. 1 holder. Now this outer sloped line is the line that we have used, the one that I have used —

Q. The one at the left of the red part representing the holder? A. Yes, sir, on each section.

Q. Yes. A. The 1 to 1 line is the line I used in each case.

Q. You mean by that what? A. A slope of 45 degrees, 1 foot down and 1 foot out.

Q. Yes. A. At the No. 3 section —

Mr. MATTHEWS. No. 3 holder?

The WITNESS. Yes. The section of the No. 3 holder, the part that is hatched is the slope line that Mr. Kirkpatrick testified to, or it is a slope of 3 to 22 feet; that is, in 22 feet height he only goes out 3 feet.

Q. 22 feet depth he goes out 3 feet? A. 22 feet vertically and 3 feet horizontally. At the section of the No. 2

holder, according to his testimony, it is 19 feet vertically and 1 foot 2 horizontally.

Q. That is, for the 19 feet of depth, he goes out 1 foot 2 inches? A. Yes, sir, 14 inches.

Q. And at the section of the No. 1 holder, for a depth of 21 feet and a half vertically, he goes out 1 foot 2 inches? A. Yes, sir, 14 inches. And at the section of the No. 1 holder, for a depth of 21 feet and a half vertically, he goes out horizontally 4 feet 8 inches.

Q. Yes. Is there anything further that you think needful to say with reference to the sketch? A. No, sir.

Mr. BROOKS. Will you have that marked?

(Sketch marked "Exhibit 258, S. M. S.")

Q. Mr. Sawin, have you made an examination of the books of the Holyoke Water Power Company to find out the amount of repairs charged up against the electric lighting plant of the Company? A. I have.

Q. Excuse me, I mean of the hydraulic plant? A. Yes, sir

Q. The hydraulic plant of the Company? A. Yes, sir, the hydraulic plant.

Q. For how long a period? A. Since it was built.

Mr. GOULDING. You mean the hydraulic plant after they erected it?

Mr. BROOKS. Yes, it is the only plant that they built.

Mr. COTTER. How many years, Mr. Sawin?

The WITNESS. Beginning with the year 1891, including 1900,— nine years.

Q. A period of nine years? A. Ten years.

Q. Ten years. For that period of ten years how much do you find was expended by the Holyoke Water Power Company in the repair of its hydraulic plant at the electric lighting station? Now that may be objected to.

Mr. MATTHEWS. We object to that on the same ground that the other question was objected to. The best evidence would be the books and the book-keeper.

The CHAIRMAN. Hasn't that already been stated?

Mr. BROOKS. No, your Honor. I endeavored to show it through a witness, but I was unable to, because he hadn't been through the books.

Q. Did you go over these books in company with the book-keeper of the Company, Mr. Stapleton? A. In company with the book-keeper and Mr. S. B. Winchester.

Q. Have you prepared a tabulation of the amount expended for repairs for the various years that you have spoken of at the hydraulic plant and the electric lighting station, and for this period of ten years? A. Yes, sir.

Mr. BROOKS. Do you still object, Mr. Matthews?

Mr. MATTHEWS. Yes, sir.

Mr. BROOKS. Well, do you say that we must have the books here? Do you object on that ground, or do you say that you will be content if the book-keeper is here?

Mr. MATTHEWS. Our object will not be to force the Company to prove every item of charge by reading the entries from the books, but we shall have to insist that the entries shall be proved by—

Mr. BROOKS. The book-keeper?

Mr. MATTHEWS. The book-keeper himself, and that the books shall be of convenient access to us at the time that he testifies.

Mr. BROOKS. Well, what do you mean by that?

Mr. MATTHEWS. I take it we shall have to be in Springfield before you close your case. Mr. Stapleton will be called, and the books will be either there or in Holyoke.

The CHAIRMAN. Now I will make this suggestion, that Mr. Green or somebody the respondent will appoint could go up there and look over with Mr. Stapleton this whole thing without any trouble.

Mr. MATTHEWS. I should think that might be done. As a matter of practice, I should have no objection to it.

Mr. BROOKS. I should like to have this go in, if I may, your Honor, subject to its being—

Mr. MATTHEWS. I should like to ask the book-keeper some questions about it, and I don't see that this witness can answer them.

Mr. BROOKS. Would you object to putting these in through the book-keeper without the presence of the books?

Mr. MATTHEWS. Not if I can have an opportunity to see the books.

Mr. BROOKS. You shall have every opportunity.

Mr. MATTHEWS. We shall be in Springfield again.

Mr. BROOKS. But we shall not remember to put these in.

Mr. MATTHEWS. Oh, yes, you will. We shall not force the Company to prove each item by the books.

The CHAIRMAN. I think Mr. Green will appoint some one to look them over.

Mr. MATTHEWS. That will apply to the other entries that the Company put in also.

Mr. BROOKS. Well, then, I don't need to have Mr. Stapleton here at the present time.

Mr. MATTHEWS. Mr. Green, would you look after it next Saturday?

Mr. GREEN. I will endeavor to, or have somebody.

Mr. COTTER. In the mean time it seems to me that Mr. Stapleton might prepare a schedule and have it in readiness.

Mr. BROOKS. This is really prepared by Mr. Stapleton

Mr. COTTER. Excuse me.

Mr. BROOKS. Really verified by Mr. Sawin.

Mr. COTTER. I assumed this was one prepared by Mr. Sawin.

Q. Mr. Sawin, did you take a series of photographs of the so-called lot at — for the ideal location at Jones's Point? A. Yes, sir.

Q. When were they taken? A. They were at two different times, the first time being March 31, 1901, and the second time April 8, 1901.

Q. Yes. Is that large map here? A. Yes, sir.

Q. Will you be kind enough to hang that and point out upon that map the particular part that was comprehended by your photograph? (The map marked "Exhibit 235, F. H. B.," was hung on the wall.) Now begin with the first series. A. Well, picture No. 1 is not of Jones's Point, if you care to commence at the lower end.

Q. What does the photograph which you have numbered No. 1 represent? A. That represents a view taken between the Holyoke and Westfield Railroad track and the Connecticut River, looking south from Berkshire Street. On this large map it is a view taken from on top of the power house building of the street railway power house.

Q. That is, that represents a view of the section between the — that is comprehended between the street railway company power house and the trotting park? A. Yes, sir, and also between the Holyoke & Westfield Railroad track and the Connecticut River, the section lying in between.

Q. And whereabouts is the water that is depicted in this picture? A. Well, the water had set back at that time and over South Main Street, about 4 feet of water on South Main Street, running right up and along the edge of the City lot, about the south line of Berkshire Street.

Q. And how was the water — was there water between the street railway company's power house and the Trotting Park Association's land? A. Yes.

Q. All the distance substantially? A. Yes, sir.

Mr. BROOKS. I offer that picture.

Mr. BROOKS. No objection, I take it.

Mr. GREEN. Mr. Sawin, I understand, took it.

Q. Mr. Sawin, is that a correct representation? A. Yes, sir.

Q. Now I show you picture No. 2, and what does that represent? A. The same view, taken from down on the ground, off of Berkshire Street.

Q. Taken from a different position? A. View No. 1 is from the top of the power house building, view No. 1 and 2 are the same thing, view No. 1 taken from the top of the building and No. 2 on the ground.

(The photographs Nos. 1 and 2 were respectively marked "Exhibit 259, S. M. S.," and "Exhibit 260, S. M. S.")

Q. What does photograph No. 3 represent? A. That is a photograph of the City lot, so-called City lot. That is taken from the high ground at the westerly — the north-westerly

corner, right in here, shown on this map, looking southerly across the lot. That shows the Union Basin on the lot, which shows on the drawing.

Q. And what does this wide spot represent down to the right hand of the picture? A. That is water.

Q. Set back from the river? A. Probably. It must have been. The water was right up to the edge of the high ground there.

(Photograph No. 3, marked "Exhibit 261, S. M. S.")

Q. And does No. 4 represent — this photograph No. 4 — show the same lot taken from the rear of the Germania mills?

A. Yes, sir. I would like to say that the printed matter on these pictures can be read easily on the backs.

(Photograph No. 4, marked "Exhibit 262, S. M. S.")

Q. I show you the photograph which you have numbered 5, and ask you what that is a picture of? A. That is a picture of Jones's Point, taken May 30 — March 30, 1901.

Q. Yes. A. It is taken from the northerly end of what we call the point, looking southerly.

Q. Show on the map over what space that extends? A. On this large map, the camera standing about in that point right in there, looking southerly across this half of the point.

Q. And you say that is taken when? A. March 30, 1901.

The CHAIRMAN. This is Jones's Point, is it?

The WITNESS. This is Jones's Point.

(Photograph No. 5, marked "Exhibit 263, S. M. S.")

The WITNESS. That part is the old roadbed of this road.

Q. Of the present Boston & Maine? A. Yes, of the present Boston & Maine.

Q. There? That roadbed, which runs around this side of this white line, this light line, this referred to the old roadbed?

Mr. GREEN. Your photograph doesn't show anything between the old roadbed and the present new bed?

The WITNESS. No, sir.

Mr. GREEN. If I understand right, your red line here bounds the old roadbed, does it, the red line?

The WITNESS. This part shown between these two dark lines.

Q. Those show the old roadbed came right along on your black line and next to your red border? A. Yes, sir.

Q. And your photograph does not show the land between the present roadbed and the old roadbed? A. Only a part of it. Perhaps part way across the —

Q. I show you photograph which you have numbered No. 6, and ask you what that represents? A. That is the same picture, same view as No. 5, only taken April 8, 1901.

Q. That is of —

The CHAIRMAN. That is of what?

The WITNESS. Of Jones's Point, same view as No. 5. These two really go together.

(Photograph No. 6, marked "Exhibit 264, S. M. S.")

Q. And that last view was taken? A. April 8, I think.

The CHAIRMAN. It shows you can get all the water you want for condensing purposes.

Mr. BROOKS. Yes, sir, if they erect their plant on the float, I should think it would be very convenient.

Mr. GREEN. It doesn't show the point on which it was designed to build the plant.

Mr. BROOKS. We say it does.

Mr. GREEN. We differ from you very materially.

Q. Mr. Sawin, is this a representation of the plot of land that has been recommended by various gentlemen as the place to put an electric lighting station?

Mr. GREEN. I object. That is for the Commission to pass upon.

Mr. BROOKS. You made the statement, and I thought it was fair.

Mr. GREEN. I made the statement that he has not photographed the land—he says he has not—which runs between the present location and the old location.

Mr. COTTER. He has photographed Jones's Point.

Mr. GREEN. Part of it.

Q. Mr. Sawin, how far from the dam is this representation?

Mr. COTTER. Photograph No. 5.

Mr. BROOKS. Photographs Nos. 5 and 6. I am obliged to you.

A. About 6,000 feet. The pictures are taken about 6,000 feet from the dam.

Q. And how much territory is covered by your pictures, in acres, should you say? A. Why, picture No. 5 covers at least half of what we call Jones's Point, the northerly half.

Mr. COTTER. How many acres?

The WITNESS. How many acres?

Mr. COTTER. Yes.

The WITNESS. Pretty near 10 acres.

Mr. GREEN. Between what points? I didn't get the question.

The WITNESS. Picture No. 5 covers —

Q. I show you three photographs which you have numbered 7, 8, and 9, and ask you what they represent and are pictures of? A. Picture No. 7 is a view of the old roadbed at Jones's Point, taken March 30, 1901. This picture is located on this large map, right in here, between these two black lines in which is written "Connecticut River Railroad Company." Nos. 8 and 9 are pictures of the same locality, taken April 8, 1901. One is looking northerly and the other southerly. That is the land that lies between the westerly line and the easterly line of the railroad land.

Q. The westerly line and the easterly line of what? A. Of the railroad land.

Q. And will you be kind enough to point out again on the map just where this land lies — water lies, rather, that is depicted in these pictures? A. In this part, marked "Connecticut River Railroad," there is a strip that the railroad occupy now with their rails, about — perhaps, say, a quarter or pretty near a third of their whole width, that is used as their location. Easterly of that is a high knoll for a short ways. Then it drops off into lower land, which this picture No. 7 shows. There is the high knoll I speak of. It drops off into the old location, being right here; then drops off again into

the river. This bank on No. 8—that is the old location of the river. Picture No. 8, down in the right-hand corner, this little knoll is the same one shown in No. 7. No. 9 is the same view, looking the other way, taken from the same spot as No. 8.

(Photographs 7, 8, and 9, marked respectively "Exhibit 264, A," "Exhibit 264, B," and "Exhibit 264, C.")

Q. I show you photographs 10, 11, and 12 of your numbers, and ask you to tell us what they are pictures of? A. They are all of them bird's-eye views of Jones's Point, taken from the southerly end of it, looking northerly.

Q. Well, now, just point out on the map. A. Taken from—No. 10 is a bird's-eye view taken off of the high ground, right in here, about where it is marked,—right near Bowdoin Place, looking northerly across Jones's Point. That view is taken March 30, 1901.

Q. Now just how much, if any, of Jones's Point, does that view comprehend? A. That shows the southerly half. This part depicted here is this point shown on this map.

Q. That is, these series of pictures show the other half of Jones's Point? A. Yes, sir, the southerly view.

Q. Your previous series showing the northerly half? A. Yes, the northerly half.

Q. Yes. Well, now, what is No. 11? A. No. 11 is a bird's-eye view, taken from about the same locality; but the camera sat down next to the railroad track.

Q. This is of the southerly half of Jones's Point? A. Of the southerly half of Jones's Point. No. 12 is the same view as No. 10, taken on the date of April 8, 1901, showing three-quarters of the whole of Jones's Point.

Mr. COTTER. Was the water about its usual height at that time, or higher than usual?

The WITNESS. The water was at its spring height, the usual spring height.

Mr. GREEN. The usual spring height?

The WITNESS. Yes, sir.

Q. Now I think that comprehends them all, doesn't it?

A. Yes, sir, that is all.

(Photographs 10, 11, and 12 were severally marked, "Exhibit 265, S. M. S.," "Exhibit 266, S. M. S.," and "Exhibit 267, S. M. S.")

Q. In any of the schedules introduced by the petitioner in this case, Mr. Sawin, has there been any charge made for filling and grading the land of the gas plant? A. No, sir, excepting the interior of the buildings; nothing for the outside of the buildings,—the yard.

Q. And was there any charge made in any of the petitioner's schedules for the wall,—the retaining wall? A. No, sir.

Q. At this gas plant?

Mr. GREEN. Now, in the first place, the evidence speaks for itself.

Mr. BROOKS. No, it does not.

Mr. GREEN. You mean the petitioner's schedules?

Mr. BROOKS. The schedules speak, so far as they can speak.

Mr. GREEN. I object, if the question is general, to this witness testifying that the petitioner's schedules do not contain such a charge. I differ in one respect from the witness, and want the Commissioners to pass on it. I say that one of the schedules did put in the retaining wall.

Mr. COTTER. So long as they object, Mr. Brooks, we think it is our duty to pass on them.

Mr. BROOKS. Very well.

Q. Mr. Sawin, in any of your estimates of quantities or Mr. Walther's estimates of quantities, have you included the filling and the grading of the lot upon which the gas plant is located? A. Nothing except the interior of the building.

Q. And in any of the estimates of quantities of Mr. Walther or yourself that have gone into this case is the retaining wall included? A. No, sir.

Mr. BROOKS. That is all I care to ask.

Re-cross examination by Mr. GREEN.

Q. Wasn't April 9 the height of the flood this spring?

A. I could not tell you. Those pictures were taken April 8.

Q. April 8? Was not April 8 the height of the flood?

A. I would not say.

Q. Do you say that this spring's freshet in April in the Connecticut River was the usual and average height of the spring flood? A. Nothing unusual.

Q. Wasn't it the highest mark that has been made for a great many years? A. I do not so understand it.

Q. You do not? Well, we will take your understanding of it. A. Beg pardon?

Q. I say, we will accept your understanding, if that is all you can give us. You have not the figures I take it, then?

A. I have the figures,—the height of water on the dam that day.

Q. Did you see any portion of the present tracks of the Connecticut River Railroad under water? A. No, sir.

Q. How much higher than the railroad track is the land that adjoins it to the east of the railroad at Jones's Point? A. The part—you mean that bank, that high bank on the east side?

Q. I say, take the land on the east side of the track. How much higher than the track is it? A. Six or eight feet for a short way.

Q. For a short way? A. Yes, sir.

Q. Did you measure the height yourself? A. Oh, no.

Q. That is merely an estimate in your mind? A. Merely an estimate.

Q. Did you take any measurements to show how far it was from the railroad track to the point where the water from the river reached the land? Or, to put it the other way around, how much land there was between the railroad track and the river that was not covered with water? A. At April 8?

Q. Yes. A. I did not take any measurement with a tape.

Q. Did you take any measurement with anything else? A. Merely estimated it with my eye when I was there.

Q. You took no measurements? A. No, sir.

Q. Did you take any measurements to show how far north and south along beside the railroad track the land was out of water? A. No, sir.

Q. Your photograph of the southern part of Jones's Point does not extend, does it, beyond this pond which is represented on this plan? A. That is where your high ground commences.

Q. I didn't ask you that. Can't you answer the question? Your photograph of the southern part does not extend beyond this pond? A. Along the railroad, you mean?

Q. Yes. A. No, sir.

Q. That pond is always there, isn't it? A. That pond is always there.

Q. From the end of this pond up to Jones's Pond, so-called, is a matter of 1,600 feet, isn't it, about? It measures very nearly 8 inches. A. About 1,600 feet.

Q. When you say that your pictures from the northern part were taken, how close to this northern pond was your camera? A. About—in the neighborhood of 300 feet—300 to 400 feet below the pond.

Q. This is the pond. There are two ponds. This is Jones's Pond, so-called. I don't know whether the southern one has any name. Where was it taken, Mr. Sawin, relative to this line which is drawn from Jones's Pond down to the river, the dotted line? A. It was taken right on the east slope of the railroad, I should say about 350 feet east of the pond.

By Mr. BROOKS.

Q. East of what? A. East of Jones's Pond.

By Mr. GREEN.

Q. It would be pretty nearly at the very upper end of this red space? A. No, about 350 feet.

Q. South of it? A. East of it.

Q. I thought *that* was east. Excuse me. Well, we will say east or south-east. What size lens did you use? A. What size lens?

Q. Yes. A. I couldn't tell you as to that.

Q. How much of the space which lies south or south-east of the point at which you placed your camera do your photographs include in feet? I did not know but you could give it to me in feet. A. I think I said that the photograph taken from the northerly side of Jones's Point took in about 10 acres.

Q. Well, except so far as Exhibit 263 shows at the right-hand corner a space included by the old roadbed, it shows none of the space which lies between the present and the old location of the Connecticut River Railroad? A. Yes, sir, it shows quite a little of it.

(Noon recess.)

AFTERNOON SESSION.

WALLACE E. SAWIN, *resumed.*

Re-cross examination by Mr. GREEN, continued.

Q. I show you Exhibit 266. Is the water represented there the water of the pond? A. What is that?

Q. I say, is the water represented there, next the railroad track, the pond? A. Do you mean that pond shown on the map?

Q. Yes. A. The pond is wholly submerged.

Q. Isn't there land between the pond and the river? A. That is wholly covered over.

Q. Isn't there a strip of land separating that from the water? A. No, sir.

Q. However that may be, does that water represent the height of the river at the time that photograph was taken? A. Yes, sir.

Q. How much below the level of the railroad track should you say it was, both from your memory and your observation and the picture? A. At that point?

Q. Yes. A. Well, it would only be a guess.

Q. You can remember; you saw it. Give your judgment. A. I should think it might be three feet.

Q. About three feet below the level of the track at that point? A. Yes, sir.

Q. What was the widest strip, in your judgment or from your recollection, between the present location of the railroad tracks and the water line, as things were April 8?

Mr. BROOKS. Mr. Sawin, have you got a detailed plan of that?

The WITNESS. I have a detail of the lands.

Mr. GREEN. As I understood it, he took no measurements of these, and I ask for his judgment.

The WITNESS. I should say,—from the railroad track, you ask me?

Mr. GREEN. Yes.

The WITNESS. The widest part of it?

Q. Yes. Throughout that whole strip, what was the widest distance between the railroad tracks and the water line? A. I should think about 75 or 80 feet. I am only—I didn't measure it. I only looked at it. I should say 75 or 80 feet.

Q. I wish you would just measure that, Mr. Sawin, and see if it wasn't nearer 150 feet. It is a pretty large scale. A. (Measuring.) No. I think, Mr. Green, it wasn't over 75 or 80 feet.

Q. How long a space was that 75 to 80 feet wide that was above the water line? A. It might have been 400 feet long.

Mr. GREEN. I don't think of anything more I care to ask.

Re-direct examination by Mr. BROOKS.

Q. Mr. Sawin, you tell me that you have got a detailed plan of this Jones's Point location? A. Of the railroad lands.

Q. Of the railroad lands? A. Yes, sir.

Q. Have you it here? A. Yes, sir.

Q. I didn't know about that at the time. I don't know but I will put that in. This is the plan that you now produce? A. Yes, sir.

Q. Will you be kind enough to explain that to the Commission in all its material parts? A. In the location of 1849 the railroad was around on this red line here (indicating), this being the centre line location.

Mr. TURNER. The easterly red line?

The WITNESS. The easterly red line.

Q. The easterly red line? A. Yes. In 1869 they took a new location, which was the westerly red line, the centre line of location. Now I have deeds showing —

Q. Go ahead with the explanation of your map. A. I have deeds which correspond to these numbers.

Mr. GREEN: Well, now, I supposed this was to be a description.

Q. Well, I will ask you, have you deeds corresponding to those numbers, or certified copies of deeds corresponding to those numbers? A. I have.

Q. Now proceed with the explanation of your plan, what the different lines represent. A. This wash of green (indicating), this plot colored in green, was sold to the Connecticut River Railroad Company by Horace Atkins, which is a deed entered into giving it —

Mr. GREEN. I object.

The WITNESS. This part in yellow (indicating) was taken by the Connecticut River Railroad Company, and appraised by a sheriff's jury —

Mr. GREEN. I object to this.

Q. Have you a certified copy of that? A. I have.

Mr. GREEN. If he wants to describe this land, all right. I supposed Brother Brooks was going to ask him about the elevation, the height, and so forth.

Mr. BROOKS. I haven't said anything about the elevation.

Mr. COTTER. It is all right, Mr. Green, up to the time he began to describe about the sheriff's jury. That may be stricken out. All he said about the sheriff's jury may be stricken out.

Q. What deeds or decrees have you with reference to any of the land that is comprehended by this map other than those that have been put in? A. I have five papers here (showing). They correspond to the numbers on that drawing. This plot here (indicating), colored in green, is marked No. 30. That corresponds to the deed marked No. 30.

Q. From whom to whom? A. Horace Atkins to Connecticut River Railroad Company.

Mr. BROOKS. I offer a certified copy of that deed.

Mr. GREEN. For what purpose?

Mr. BROOKS. To prove title, of course.

Mr. GREEN. I object to it.

Mr. COTTER. So long as the plan goes in evidence, anything that will explain it may go in.

Mr. GREEN. I don't know whether the plan goes in yet or not. My Brother Brooks hasn't offered to show it to me.

Mr. BROOKS. Take it, and examine it to your heart's content.

Mr. COTTER. Do you offer the plan, Mr. Brooks?

Mr. BROOKS. Certainly, and I would like to have it marked.

(Plan marked "Exhibit 268, M. A. P.")

Mr. BROOKS. And I would like to offer a certified copy of the deed from Horace Atkins to the Connecticut River Railroad.

Mr. COTTER. To explain certain representations on the plan? It is admitted for that purpose.

Mr. GREEN. I take exception to that, your Honor.

(Deed marked "Exhibit 269, M. A. P.")

Q. What part of this plan which you now produce, marked Exhibit 268, is covered by the deed of Horace Atkins to the Connecticut River Railroad? A. That part which is colored in green, and marked No. 30 in red.

Q. Is that the section that is marked No. 30? A. Marked No. 30, and colored in green.

Q. Proceed to section 31. A. No. 31?

Q. No. 31. A. I have two papers, No. 31 and No. 33, which comprehend this piece in yellow, and this little piece here (indicating), colored in yellow, marked No. 33 and No. 31. There are two papers, marked A and B. A is a petition of the Connecticut River Railroad Company for the estimation of damages of Chester Crafts.

Q. Yes. A. And B is a petition of Roswell P. Crafts for a sheriff's jury.

Q. And it comprehends, does it not, the decree? A. Yes, sir.

Q. And so does A comprehend the decree? A. Yes, sir.

Mr. GREEN. I suppose the papers show what they comprehend.

Mr. BROOKS. I didn't know but you would require me to read all these.

Mr. GREEN. No. Do you offer these, Mr. Brooks?

Mr. BROOKS. Yes.

Mr. GREEN. I object to their admission, as being incompetent and irrelevant, having no relation to this case.

Mr. COTTER. Are they certified copies?

Mr. BROOKS. Yes, sir, both of them.

Mr. COTTER. In the way of explanation, they may be marked and admitted.

(Papers marked "Exhibit 270" and "Exhibit 271," respectively.)

Mr. GREEN. Will you note my exception?

Mr. COTTER. Yes. That is subject to Mr. Green's exception.

Q. Both of these comprehend the more recent location of what is now the Boston & Maine Railroad Company? A. Yes.

The CHAIRMAN. I don't understand the object of this.

Mr. BROOKS. One object is to show that a man by the name of Crafts didn't own the land that somebody said they understood him to own, on which they were going to put their ideal plant.

Mr. GOULDING. The general object is to show that the land they referred to as available for the ideal plant is not available.

Mr. COTTER. We made that inquiry in consequence of something Mr. Green said.

Q. What are the other sections that you have of this particular plan, which is Exhibit 268? A. That plot that is colored in green, and marked No. 32,—I have a paper here,—the Connecticut River Railroad Company, petitioner for estimation of damages on land of H. W. Jones and wife.

Q. That also contains the decree? A. Yes, sir.

Mr. BROOKS. I offer the certified copy of that.

(Marked "Exhibit 272, M. A. P.")

Mr. COTTER. That is a petition to take for railroad purposes?

Mr. BROOKS. Exactly. The petition so states.

Mr. GREEN. I suppose it will be admitted, and we will save an exception.

Q. That exhibit also comprehends the more recent location of what is now known as the Boston & Maine Railroad Company? A. Yes.

Q. Take up section 34. A. That portion that is colored in green, marked No. 34,—I have a certified deed from H. W. Jones to the Connecticut River Railroad Company.

Mr. GREEN. This is included in our exception.

Mr. COTTER. This is subject to the same exception, Mr. Green.

(Deed marked "Exhibit 273, M. A. P.")

Q. Have you plotted this particular plan that is last in evidence from these various documents that you are putting in?

A. In some cases, that is what they refer to. They refer to the plan filed with the County Commissioners.

Q. And so you took in that plan? A. I have it here. (Produced.) From—in some cases, what these refer to—they refer to a plan which is filed with the County Commissioners.

Q. Yes, exactly. And so you took in that plan? A. I have it here.

Q. Have you that plan that was filed with the County Commissioners? A. I have a copy of it, a tracing with a pencil.

Q. That you made yourself? A. Yes, sir.

Mr. BROOKS. I will offer that.

Mr. GREEN. Well, to be consistent, inasmuch as I objected to those deeds, I will object to that.

Mr. COTTER. It seems to me there may be some difficulty with that, Mr. Green, or Mr. Brooks, rather.

Mr. BROOKS. If they take the attitude that the original plan is the best evidence, I agree that it may be, but I had no way of getting it from the County Commissioners without subpoenaing the clerk of the board.

Mr. GREEN. Well, I am not objecting to this on the ground that it is not the original, and I didn't intend to. I

object on the ground that it is incompetent. If Mr. Sawin says that is an accurate copy of all that is on the map, and everything that is on the map, and no part left out, why, I should be willing to take it in lieu of the map.

The WITNESS. Did you ask me that as a question?

Mr. GREEN. Yes.

The WITNESS. That is everything that is on the map and a little more. I put in "Copied by W. E. Sawin, April 5, 1901."

Mr. GREEN. And there is no addition in there —

Mr. COTTER. If there is no other objection than you have stated, it may be admitted subject to your exception.

Mr. GREEN. I object on the ground the evidence itself is not admissible.

Mr. BROOKS. That is, that the original is not admissible?

Mr. GREEN. The original is not admissible.

Q. Mr. Sawin, what is this plan that I now show you? A. You want me to read this title that is on here?

Mr. GREEN. It seems to me this all speaks for itself.

Mr. BROOKS. He can tell.

Mr. GREEN. Doesn't it show for itself?

The CHAIRMAN. Well, let him tell. Supposing it does?

The WITNESS. Plan filed with the County Commissioners of Hampden County, showing the land taken for the 1869 —

Mr. GREEN. I object to that explanation.

Mr. BROOKS. I submit it is competent.

Mr. GREEN. The deeds are in and the plans are in, and I say they speak for themselves; and I don't know about it, and I don't care to have the witness interpret it.

Mr. COTTER. I think it is admissible.

Q. Is this plan filed with the County Commissioners? A. Yes, sir.

Q. By whom?

Mr. GREEN. I suppose the plan should —

Q. By whom? A. By the Connecticut River Railroad Company.

Q. And the Connecticut River Railroad Company was the

predecessor of the Boston & Maine Railroad Company? A. Yes.

Mr. COTTER. The conveyances practically show that.

Mr. GREEN. I suppose so. I don't know.

(Tracing marked "Exhibit 274, S. M. S.")

Q. I show you a certain plan or sketch, which is marked "Exhibit 3, for identification, W. L. H.," and ask you what that represents? A. That is a tracing of the plan Mr. Kirkpatrick introduced of the City lot, showing the sewers, with Mr. Davis's ideal plant located on the plan as he has shown it, the outline of the buildings as he has shown it.

Mr. BROOKS. I offer that.

(Marked "Exhibit 275, S. M. S.")

Q. Mr. Sawin, what was the extent of the excavation for the dynamo and engine buildings at the electric plant?

Mr. GREEN. I object to that.

Q. And what, if anything, was there peculiar about the excavation at those two buildings, or the extent therefor?

Mr. GREEN. I object to that.

Mr. COTTER. Why is that material, Mr. Brooks?

Mr. BROOKS. Because we never have got it before, and it is in view of some of the estimates given here by the witnesses called for the defendant, in explanation of the figures.

Mr. GREEN. Well, I object on the ground that the petitioners, when they put in their case, put in estimates of quantities. They have estimated how much excavation was necessary at this place to rebuild these buildings, and we have met that. Now I say that he is putting in something new, bringing out something different, something that we have not had an opportunity to deal with before. It is something in the nature of direct testimony. I don't think it ought to be offered now.

Mr. COTTER. Haven't you dealt with that somewhat, Mr. Green? Didn't your side go into that?

Mr. GREEN. Well, only so far as we estimated the excavation, answering their estimates of excavation. They put in their schedule of quantities, and then we figured out quantities.

Mr. BROOKS. Of course, your Honors understand, it is the re-direct examination of Mr. Sawin.

Mr. COTTER. I have forgotten about that part of it. Yes, that is so.

Mr. GREEN. Well, then, I claim that, being the re-direct, they have no right to put it in now for the reason that they have closed their examination of this witness, turned him over to us for cross examination, and this is nothing brought out by any question I have asked. I only asked two or three questions about the photographs.

Mr. COTTER. It was stated when he was called, Mr. Green, that this was on re-direct, and that some question was held open; and I have a recollection that was the case, that there was a further examination reserved of Mr. Sawin.

Mr. BROOKS. In the midst of the defendant's case they put Mr. Sawin on, and re-cross examined him.

Mr. COTTER. Yes, and I think when he was called there was a reservation that further questions would be put, but Mr. Sawin did not appear immediately afterward. That being the case, we ought to give them their right to continue their re-direct examination.

Mr. GREEN. Well, you mean this was a witness called by the plaintiff in this case, the petitioner?

Mr. COTTER. Yes.

Mr. GREEN. We have cross examined him. Now they are going into absolutely new matter. Supposing it stood just as it was originally —

Mr. COTTER. Well, then, Mr. Green, you called him after the petitioner had rested; you called him, and thereby made him your witness.

Mr. GREEN. I don't understand so. I didn't call him.

Mr. COTTER. I supposed you had.

Mr. GREEN. That is, our side asked him some questions. I recall the circumstances, but I don't understand we recalled him as our witness.

Mr. COTTER. When the other side rests its case, and you see fit to call one of their witnesses, you call him as your witness.

Mr. GREEN. I understand that. I understand this witness

was reserved on some question for further examination, as other witnesses have been.

Mr. COTTER. That is my recollection. I think there was a reservation, stating he was to take up—to further examine him, and that he was absent by reason of illness or something else.

(The last question was read, namely),—

“Q. And what, if anything, was there peculiar about the excavation at those two buildings or the extent therefor?”

Mr. GREEN. When? I don't understand the time alluded to.

Mr. BROOKS. I mean when the building was built.

Mr. GREEN. Then I object to it. It don't make any difference what it was when the buildings were built. They are buildings estimated as of January, 1898—

Mr. BROOKS. I think that has been tried long ago.

Mr. GREEN. I don't think we can try the question of how much excavating was done when these buildings were built. It is opening up an entirely new field of investigation.

Mr. COTTER. With the reservations that were made, we think he better answer that question, Mr. Green.

Mr. GREEN. I should like to save an exception to it, for I think it is going to open up an extensive question, and one which I don't think is fairly open.

The CHAIRMAN. Why do you say that?

Mr. GREEN. Because my recollection is that this gentleman was not recalled anew by us. I speak with some hesitancy, because it is only my understanding. I didn't hear Mr. Sawin recalled, and was not at that moment in the room, and don't know myself just the circumstances. Mr. Matthews put him on, but my recollection is that his cross examination was reserved; that is, that he was not finished on cross examination.

The CHAIRMAN. Are you going into all the buildings, Mr. Brooks?

Mr. BROOKS. No, sir. Of course, it is unnecessary, perhaps, for me to say that this is for the purpose of explanation;

that there is a diversity in the amount of excavation by some of these witnesses called by the other side from the amount stated by ours. I think it is fair to state it.

Mr. GREEN. I understood that the petitioner's witnesses estimated what it would cost new, January, 1898, to rebuild these buildings. I did not understand that they attempted to tell us what it did cost to build these buildings new, whenever it was that they were built.

Mr. BROOKS. I am not asking about the cost.

Mr. GREEN. Well, you are asking him in substance what difficulties you met with and what trials and tribulations you had, and what circumstances entered into the actual original excavation.

Mr. COTTER. I think he may answer.

Mr. GREEN. I should like to know if the witness knows of his own knowledge or what he has inquired into.

Mr. COTTER. Certainly. Mr. Sawin has been here so long that he ought to understand that he is not to testify except to matter he knows of his own knowledge. He has heard the lawyers state that a great many times.

Mr. GREEN. I should like to save an exception to this line of inquiry.

Mr. COTTER. Certainly. You don't mean the cost of this excavation?

Mr. BROOKS. I am not asking about the cost.

Mr. COTTER. He is asking the extent.

Mr. BROOKS. I have a right to put in the extent and the peculiarity requiring a certain excavation, I suppose.

The CHAIRMAN. All right.

Mr. BROOKS. Now, Mr. Sawin, do you desire any plan?

The WITNESS. It is right here. The surface shown on the plans of the finished building is quite different than it was originally. Therefore, a man estimating from the plans would naturally have a great deal less excavation —

Mr. GREEN. I object to that. The Court can draw its own inference; state the facts, and let it go.

Mr. BROOKS. He is stating the facts.

Mr. COTTER. Well, it seems to me that if he will state the difference —

Mr. BROOKS. That is all right. I don't object.

Mr. COTTER. That we will let you do, and then come to the conclusion ourselves whether there would be any greater expense.

Mr. BROOKS. Yes.

Q. Well, you just state the fact or facts, Mr. Sawin. A. You want the way I estimate it?

Q. Certainly. A. I estimated all of the excavations from this drawing here, the original surface of the earth.

Q. What is that exhibit? A. Exhibit 248.

Q. That shows the original surface of the earth? A. Yes, sir. Now in the engine room there was a great deal more excavation than,— I will have to say than the plan shows, because we had a retaining wall which shows on this plan.

Q. On this plan of original surface, earth's surface? A. Yes, sir; consequently, it would give you a great deal more excavation, some 8 or 10 feet higher than the plans that are in the location.

Q. That is the plan — you mean by that the plan of the location with the finished buildings upon it? A. Yes, sir; that is, in the engine room. In the dynamo building, on account of the great number of piers in the basement, we excavated the whole basement to the — down to the top of the flags of the 4-foot piers, and then backfilled. The piers are in there so close that it would be impossible to dig trenches and get flaggers in; so, consequently, we dug the whole thing right down 4 feet lower than the cellar bottom.

Q. And was that necessary? A. We thought so.

Mr. GREEN. Of course, this all goes in subject to my exception.

Mr. COTTER. Well, did you think so, Mr. Sawin?

The WITNESS. Yes, sir, I thought so.

Re-cross examination by Mr. GREEN.

Q. Did you get these quantities from the books of the Company, from records of the Company? A. No, sir.

Q. You estimated them yourself from this plan? A. Yes, sir.

Q. Which plan? A. You mean excavation?

Q. Yes. A. Excavated from this plan.

Q. 248? A. Yes, sir.

Q. Exhibit 248, isn't it? A. Exhibit 248. I took —

Q. Has that exhibit or any plan like it ever been offered in this case before? A. Not to my knowledge.

Q. Did you draw the plans for the electric light station which was put in evidence here? A. I did.

Q. A question I forgot when we were talking about this lot up at Jones's Point. You went up there for the purpose of ascertaining how much land would be under water at high water and how much of it would be above water, didn't you? A. I don't know as I went up for that purpose quite. I went up to take a photograph of it.

Q. Well, did you intend to show us how much land would be above water there, available for building purposes? A. I intended to show that the land between the railroad and the river was wholly submerged some part of the year.

Q. Well, you intended to show that. Couldn't you have shown that more accurately by measuring the land,— I mean the land that remained above water? A. Well, it depends upon what piece of land you wanted.

Q. Well, I mean the land between the old location and the new location; that is, the land that we have talked about. A. Well, I could have measured that, yes.

Q. Did you take any photograph that showed that stretch of land between the old location and the new location, the strip that is above water, 500 — 400 feet long, as you say, and 75 or 80 feet wide? A. I didn't take any photograph of that. Can I explain why?

Q. No. Well, you say you didn't take any? A. No, I didn't.

Q. Well, I have no objection to your stating why, if you want to. A. Well, according to the testimony, the particular piece of —

Mr. GREEN. Well, I object to this.

Mr. BROOKS. Well, you told him to state why.

Mr. GREEN. I didn't suppose I was going to open an argument. I supposed there was some physical obstruction or something. I didn't suppose he was going to argue the evidence.

Q. According to the evidence, the location of your site was between the Connecticut River Railroad Company's land and the river. This photograph you have. That is why you took it that way? A. Yes, sir.

Q. Didn't you hear the witnesses speak of the land starting at the railroad track being some 10 feet above the railroad track? A. Not previous to taking those photographs. That is after I took the photographs.

Q. You hadn't heard that before? A. No, sir.

Q. Did you make any profile at any place, showing the height of the land along by the river bank? A. No, sir.

Mr. GREEN. That is all.

Mr. BROOKS. That is all, Mr. Sawin.

DENNIS J. LANDERS, *recalled*.

Direct examination by Mr. Brooks.

Q. Mr. Landers, on pages 262-3 of Vol. VIII. of the record in this case there were put in evidence two bills from you to Mr. Caspar Ranger, one dated Jan. 31, 1898, and the other Oct. 31, 1898. I want to ask you if the brick furnished there for the price stated there in those bills was for the same class of work as that done by you at the Holyoke Electric Light station? A. No, sir.

Mr. COTTER. Whose evidence did you refer to?

Mr. BROOKS. Caspar Ranger's.

Q. And what was the difference, Mr. Landers? I mean by that, was it a lower grade of work or higher grade of work?

A. Well, it was for one story buildings, small affairs without any foundations, small buildings in trenches, one story buildings.

Q. Well, would it be a higher or lower grade of brickwork than that at the Holyoke Electric Light station which you did?

A. I should call it a lower grade.

Q. Yes. Now for that same year 1898 did you do other work for Mr. Ranger? A. Yes, sir.

Q. And to what extent? A. Well, there are two contracts I done for him.

Q. I suppose by contracts you mean two bills? A. Two bills, two separate, in two different places, I think.

Q. Yes. Now be kind enough to state when you did the work at these two or more separate places for Mr. Ranger, that you have just spoken about? A. July 30, 1898, is one of them.

Q. That is when the bill was rendered? A. Yes, sir.

Q. It was before, then, July 30? A. The month previous, June, of course.

Q. And what is the other bill? A. The other is July 1, 1898.

Q. That was the date of the rendition of the bill by you to Mr. Ranger? A. Yes, sir.

Q. Now will you be kind enough to take those two bills, each of which is rendered in July, and tell us the work and the character of the work and the prices that you charged Mr. Ranger for brick laid?

Mr. GREEN. What is that? Is that in answer to some of Mr. Ranger's testimony?

Mr. BROOKS. Yes, yes.

Mr. GREEN. Where?

Mr. BROOKS. I can't state the page. He gave certain prices for brick laid, and based it on his experience with Mr. Landers for that year. Now I purpose to show, if I am permitted to, that for the same class of work and same class of materials Mr. Landers provided for the electric light station, that the prices Mr. Ranger paid in that same year were much larger than he stated to the Commissioners.

Mr. GREEN. I didn't understand that. Work done for Mr. Ranger, was it?

The WITNESS. Yes, sir. This one of July 31, for brick laid in the steam engine bed at the Lyman mills.

Q. Steam engine bed? A. Yes, sir.

Q. And to what did that correspond in the work? A. That was the same work.

Q. What did that correspond to at the electric light station? A. The same class of work.

Q. How much a thousand did you charge Mr. Ranger for the brick laid? A. 66,240 brick, at \$13 per thousand.

Q. At the Lyman mills? A. At the Lyman mills.

Q. Now take the next bill you had. A. The next bill rendered was July 31.

Q. 1898? A. 1898. 24,110 bricks, at \$10 per thousand, laid in wheel house of the Beebe & Holbrook Paper Company.

Q. And to what work did that correspond at the electric light station? A. Well, that was one story, and half cement and half lime building.

Q. Did that correspond to the wheel house at the electric light station? A. About the same. There is a little more cement in this, I should say.

By Mr. GREEN.

Q. What was that, \$10? A. Yes, sir.

By Mr. BROOKS.

Q. What is the next item on that bill that Mr. Ranger paid?

A. 27,840 bricks, at \$10 a thousand, laid in the steam engine building of the Beebe & Holbrook Paper Company.

Q. How much was that? A. \$10 a thousand.

Q. That corresponds to the steam engine building at the electric light building, we understand? A. The same quality of work.

Q. What is the next item?

By Mr. GREEN.

Q. Is this a bill that you have been to Mr. Ranger and obtained? A. No, sir.

Mr. BROOKS. No, sir, it isn't. He has taken it from his books. He has got a letter press copy there.

The WITNESS. The next item is 35,200 brick, at \$12 per thousand, laid in the penstock piers and penstock of the Beebe & Holbrook Paper Company.

By Mr. BROOKS.

Q. How much is that? A. That was \$12 a thousand.

Q. What is the next item? A. 33,614 bricks, at \$13.50 a thousand, laid in the wheel pit at the Beebe & Holbrook Paper Company.

Q. Will you be kind enough to turn to your book, and tell us what other work you did for Mr. Ranger in 1898 which would comprehend the price of brick laid?

Mr. GREEN. In regard to this testimony, Mr. Brooks stated to the Commission, that this was in answer to something Mr. Ranger put in; that Mr. Ranger based his prices on what Mr. Landers charged for work. I find on turning to the evidence that that doesn't appear to be the fact, unless there is something that I haven't yet found here. I understand, by turning to page 249 of Mr. Ranger's testimony, in Vol. VI., that Mr. Matthews inquired of him, on pages 253 and 257, as to the

going price of brickwork in the city of Holyoke, and Mr. Landers stated certain prices. On cross examination the following questions and answers appear: "What other jobs besides those you have mentioned do you know were done in that period of time for \$9 and \$10 respectively? A. I don't know of any other; outside of this class of work I have specified, \$10 and \$11 is the price they run on." And we introduced two bills as bearing upon Mr. Ranger's testimony that he had stated that he didn't know of work being done below certain figures. We introduced bills of his to show that he did. That is apparently what this is offered for, as shown on pages 249 and 250; and I don't understand that that should open up the question of what bills this gentleman rendered other than the bills we offered at the time. I presumed that Mr. Brooks in getting his rebuttal ready was more familiar with the fact than I was, and assumed that what he stated was so for the moment; but this appears to be the distinct object for which they offer that evidence.

Mr. COTTER. Your claim is that, unless it refers to these bills, it isn't in rebuttal.

Mr. GREEN. It appears that those two bills we offered were offered as bearing upon the statement Mr. Landers made himself, that he couldn't recall any work done in Holyoke.

Mr. BROOKS. I can't bear in mind the pages of testimony, but I submit to your Honors that Mr. Ranger distinctly testified as to the going price in the city of Holyoke for brick laid; and he said that those were the prices that he paid, and in his testimony he had the two bills which are in evidence, with which he refreshed his mind. He testified to the going price.

Mr. COTTER. That corresponds with my recollection, certainly.

Mr. GREEN. Without taking up too much time with a matter which possibly may not be of much importance, our friends objected to this evidence, and Mr. Goulding says, on page 250, "Very well. I claim that special jobs that Mr. Landers or anybody else has done are immaterial." And Mr. Matthews says, "So they would be, if your Honor please, but

the testimony of Mr. Landers that no brick was laid in Holyoke for less than \$9 or \$10 is not immaterial." And then Mr. Brooks said, "He said he remembered of none." Mr. Matthews says, "Now we show his own bills, showing conclusively that he did lay brick at less than \$10 and \$11," showing conclusively that he did certain work at less than those prices, and it was put on the ground that it was to contradict what he had said; and Mr. Ranger was asked, "Will you state, using that bill to refresh your recollection, just what work Mr. Landers did for you in the month of January of 1898, the nature of the work, and the price at which it was done, which you paid?"

Mr. COTTER. Who put that question, Mr. Green?

Mr. GREEN. I did. That is the reason it was put in, to contradict Mr. Landers. He said that no work had been done below a certain price, so far as he knew. We produced his own bills to show some work that had been done.

The CHAIRMAN. He has tried to explain those bills. Now, as I understand it, he is asked with reference to some others.

Mr. BROOKS. I think, may it please your Honors, if I may be permitted to reply to my brother, Mr. Ranger testified to the going prices for laying brick, and he put in his schedule upon that basis; and he said further that those were the prices that he paid for corresponding work, and that he paid those prices to Mr. Landers. Now I purpose to show that Mr. Ranger paid entirely different and larger prices.

The CHAIRMAN. I thought you were going outside of that.

Mr. BROOKS. Not at all. I stick right to the work that Mr. Landers did for Mr. Ranger.

Mr. COTTER. Can you turn to the evidence conveniently, Mr. Brooks?

Mr. BROOKS. I can't.

Mr. GOULDING. Mr. Ranger certainly testified to the price of brick laid in Holyoke; and, having testified on that, I suppose it can be shown that Mr. Ranger himself paid more.

Mr. COTTER. Mr. Green has a different recollection, and we don't like to pass upon it until the question is settled.

Mr. BROOKS. I really haven't been able to keep the various pages of the testimony in my mind.

Mr. COTTER. Assuming that the testimony is as you state, Mr. Brooks, inquiry may be made, of course. If, on the other hand, it is as you state it, Mr. Green, it won't have any weight.

Mr. BROOKS. Would your Honors say, if Mr. Ranger testified that the going price in Holyoke for this class of work at this time, in 1898, was a certain price, that we can introduce testimony that he paid more?

Mr. COTTER. Yes, Mr. Brooks. We are with you on that.

Mr. GREEN. It seems to me, your Honors, that you can take this testimony and treat it in the same way as other testimony, to be dealt with later, without admitting it conclusively one way or the other.

Mr. COTTER. Yes, that is the way we are doing.

Mr. GREEN. I don't admit these propositions that they lay down at all.

Mr. COTTER. We know you don't.

Q. Did you do other work for Mr. Ranger in 1898 that comprehended brick laid? A. Yes, sir.

Q. Will you be kind enough to tell the Commission what work it was and what the prices paid you by Mr. Ranger were?

A. Yes, sir.

Q. Now have you in front of you the book in which letter press copies of bills sent to Mr. Ranger are contained? A. Yes, sir.

Q. Is that the first one? I wish you would turn to that book. A. Yes, sir.

Q. Take the first one. A. Yes, sir.

Mr. BROOKS. Is there any objection to my calling his attention to the pages?

Mr. GREEN. No, I don't object to anything that shortens it.

Q. Give the date, month, and year when that work was done. A. That is one at Mount Holyoke College.

Q. For work done at Mount Holyoke College? A. Yes, sir, the first item.

By Mr. GREEN.

Q. That is at South Hadley? A. Yes, sir.

By Mr. BROOKS.

Q. Mr. Ranger testified to that. What is that, Mr. Landers? A. 14,396 brick, at \$10 per thousand. *

Q. How much did you charge for the work? A. \$10 a thousand.

Q. What sort of work was that? A. Regular building work, part cement and part lime.

Q. You say that was at South Hadley? A. Yes, sir.

Q. Take the next one. A. 109,794 brick, laid in the art gallery at Mr. Whiting's.

Q. Where? A. In Mr. Whiting's art gallery.

Q. What was the price of that? A. \$10 a thousand.

Q. That was ordinary construction? A. Yes, sir.

Q. Take the next one, page 329, of your letter press copy. A. 92,414 brick, half cement, \$9.50, laid in Holyoke Warp Company's stock house.

Q. That was \$9.50? A. That was \$9.50.

Q. What sort of construction was that? A. That was a one story building, laid altogether above ground, excepting what was in the trenches; no foundations, no cellars.

Q. What date was that? A. December 30 or 31, 1897.

Q. That was in December, 1897? A. Yes, sir.

By Mr. GREEN.

Q. The work was done in January, 1898, wasn't it? A. In January it was.

By Mr. BROOKS.

Q. Take the next bill to Ranger, for brickwork? A. June 1, 1898, 27,240 brick, laid in Lyman Mills engine room.

Q. Laid in the engine room at the Lyman Mills. How much per thousand? A. \$9.50.

Q. Take the next one. A. July 30.

Q. That was the date of the rendition of the bill? A. Yes, sir.

Q. July 30, 1898? A. Yes, sir. 24,110 brick, half

cement, \$10 per thousand, laid in the wheel house of the Beebe & Holbrook Company. 27,840 brick, half cement, \$10 per thousand, laid in the addition to the Beebe & Holbrook steam engine building. 35,200 brick, in cement, \$12 per thousand, laid in penstock piers of Beebe & Holbrook Paper Company. 33,614 brick, in Portland cement, laid in the wheel pit, raceway, and piers of the Beebe & Holbrook Company, \$13.50 per thousand.

Q. Is that all for that? A. That is all.

Q. Turn to the next page. What other brickwork did you do for Mr. Ranger about that time, in 1898? A. July 31.

Q. That is the date of the bill? A. Yes, sir.

Q. For work done in June, 1898? A. For work done in June, 1898.

Q. Yes. A. 66,240 brick, in Portland cement, \$13 a thousand, laid in the engine bed of the Lyman Mills.

Q. Go on with your next one. When was the next work? What other job of work did you do for Mr. Ranger in 1898? A. June 30 the bill was rendered.

Q. For work done in May? A. June 1, I meant to say.

Q. What about the work? For work done in May or in April? A. Work done in May.

Q. Of 1898? A. 1898.

Q. What is that? A. 27,240 brick, laid in engine room of Lyman Mills, \$9.50.

Q. What else? A. June 30, 38,864 brick, half cement, \$9.50, laid in addition to the beater room, Parsons Paper Company.

Q. Whether or not that was for ordinary, common construction? A. Common construction.

Q. What is the next one to Ranger? A. August 1, 14,336 brick, half cement, \$9.50, laid in addition to Beebe, Webber & Company.

Q. What sort of construction? A. A one story affair, laid on top, above ground, no foundations.

Q. It didn't cover any hydraulic work? A. No, sir,—common, ordinary work.

Q. Or any of these other later jobs that you have spoken of having done for Mr. Ranger that year do not cover any brick laid for hydraulic work?

Mr. GREEN. How do you know?

Mr. BROOKS. I am asking the question.

Mr. GREEN. I thought you were telling him.

The WITNESS. This Beebe & Holbrook work would cover that. Outside of that I don't know of any.

Q. What is the next one? A. 151,720 brick, cement, half cement, \$9.50, laid in addition to Franklin Paper Company.

Q. What sort of work was that? A. That was a one story building.

Q. Did it compare with anything that you did at the Hol-yoke Electric Light Works? A. No, merely a small addition on one of the rooms there.

Mr. COTTER. We think the evidence of this witness rebuts the evidence of Mr. Ranger which appears on page 181.

Mr. GREEN. I should think that would be all right.

Mr. COTTER. As it appears on page 181 of Vol. VIII., and let the record show it. We admit it for that purpose.

Q. Mr. Landers, Mr. Matthews in his cross examination, — to which I cannot refer now by page in the book, — he asked you if you ever knew of brick being laid at a certain price, as I recall it, for mill construction or for mill work. What did you understand by the term mill work or mill construction? A. I supposed his question meant a new plant entire.

Cross examination by Mr. GREEN.

Q. Was there any other work, Mr. Landers, that you did for Mr. Ranger during the year 1898 which you haven't told us about? A. No, sir, I don't think there is. I looked all over my book.

Q. Can I look at your book? A. Yes, sir.

Q. Have you any objection to my seeing it? A. No, sir.

Q. I see that you have on bill of October 31 contract for the National Blank Book Company, \$15,655. What was that for? A. That was a lump job.

Q. For what kind of work? A. Mill job, mill work.

Q. Was that for building the National Blank Book Company's mill? A. Yes, sir.

Q. And would you call the National Blank Book Company's mill a large mill? A. A pretty good size, yes, sir.

Q. Has it a foundation under it? A. It has got a stone basement.

Q. A stone basement and mill construction you understand that to be? A. Mill construction.

Q. What did you put in your brickwork there for a thousand? A. I don't remember, now, Mr. Green. As I say, it was a lump job.

Q. Didn't you figure it at \$9.50 a thousand? A. I couldn't say as to that.

Q. Didn't you tell Mr. Ranger so, at \$9.50 a thousand? A. I don't remember that I ever did.

Q. That is a job which is an entire mill, and a good sized mill? A. Yes, sir.

Q. And you wouldn't be willing to say that you didn't figure it at \$9.50 a thousand? A. I couldn't say what I figured it at. I don't remember.

Q. The Smith & White contract for \$6,122,— that was for brickwork? A. Yes, sir.

Q. Did you put in the foundations? A. Not the stone work, no, sir.

Q. So that both in that case and the National Blank Book Company's it was mill construction and entirely brickwork that you did? A. Yes, sir.

Q. Nothing else? A. That is all.

Q. Were there any other contracts that you had from Mr. Ranger during that year? A. I cannot call to mind now. If there were, they are in that book.

Q. In any bill which you have recited this afternoon have you brought out the Franklin Paper Company job? A. Yes, sir.

Q. This is in this same bill, 151,720 brick? A. Yes, sir.

Q. Have you the bills that you read from in stating the amounts and prices of work which you had rendered?

Mr. BROOKS. You mean other than what are contained in the bill book,—the letter press copy book?

Mr. GREEN. Yes.

Mr. BROOKS. Here are the copies. (Giving papers to Mr. Green.)

Q. In this bill of the Lyman engine bed, \$13, or "laid in engine bed, Lyman Mills, 66,240," that was laid in Portland cement, was it not? A. Yes, sir.

Q. To what work in the job that we are dealing with does that compare? A. That would refer, of course, to the engine beds and cement foundations for the buildings, wheel pits, and tailraces.

Q. Is the same thing true in the bill under date of July 30, 1898, from which you read, "Laid in penstock, Beebe & Holbrook, \$13.50"? A. Yes, sir.

Q. Was that laid in Portland cement? A. Yes, sir.

Q. And the \$12 work also done for Beebe & Holbrook for the engine building, was that — A. That was Rosendale cement.

Q. That was Rosendale cement? A. Yes, sir.

Q. Then for half cement work, so-called, you have some prices here at \$10 and some at \$9.50, apparently? A. Yes, sir.

Q. Is \$10 what was actually paid you? A. Yes, sir.

Q. Any discounts or rebates? A. No, sir.

Q. This letter press book is a book you keep in Holyoke?
A. Yes, sir.

Q. Is it subject to my examination at a later date, if I desire? A. Yes, sir.

Mr. GREEN. That is all I care to ask.

Mr. BROOKS. That is all. I have nothing further to-day your Honors.

(Adjourned to Wednesday, May 8, 1901, at 10 A.M.)

SEVENTY-SIXTH HEARING.

Boston, Wednesday, May 8, 1901.

The Commissioners met at the Court House at 10 A.M.

WILLIAM H. SNOW, *recalled*.

Direct examination by Mr. BROOKS.

Q. Mr. Snow, did Mr. Fred Davis furnish plans for the retort house of the present gas plant of the Holyoke Water Power Company? A. He did not. He submitted a set, but they were not accepted.

Q. That is, there was no retort house built in accordance with the plans of Mr. Fred Davis? A. There was not.

Q. Is the output of the gas plant more or less uniform than it was in 1898? A. It is more uniform.

Q. And what has been the increase in output per year, on an average, from 1898 to the present time and including 1898? A. About 10 per cent.

Q. 10 per cent. per year? A. Per year, yes, sir.

Q. What is the present capacity of the works for output of gas?

Mr. MATTHEWS. I object. That matter was all gone into in chief, and by this witness.

Mr. COTTER. The present output?

Mr. MATTHEWS. No, this is the present capacity of the works. The present output I do not object to. The witness has stated that. This is the present capacity. That was all gone into in chief through this witness and others,—unless there has been some increase in capacity since 1898.

Mr. BROOKS. I cannot say there has been.

Mr. MATTHEWS. I think this witness testified the other day there had been no addition to the works.

Mr. COTTER. If there has been no increase, if the conditions are unchanged, how is it competent?

Mr. BROOKS. Simply this: it is an answer to certain testimony that has been put in here by Mr. Davis and others, that immediately the capacity of this plant must be increased by reason of the growth of the business. Now I purpose to show, if I am permitted, what the present capacity of the plant is and what the present output is.

Mr. MATTHEWS. We have no objection to the evidence—

Mr. BROOKS. So far as that—if I may be permitted to finish what I have to say—to show by those figures that Mr. Davis is entirely wrong when he says that the plant must be immediately extended.

Mr. MATTHEWS. The evidence, of course, is entirely competent. Our objection is that it has been gone into in chief with great fulness.

Mr. GREEN. Mr. Snow gave the capacity of every portion of the plant.

The CHAIRMAN. That is my recollection, Mr. Brooks.

Mr. BROOKS. Does your Honor say that that would not be in rebuttal to Mr. Davis, to take the present capacity of the plant and the present output of the plant, and show that Mr. Davis is utterly mistaken when he says that it would need to be extended?

Mr. COTTER. Even if Mr. Davis did so testify, did you not introduce some evidence on that subject in chief?

Mr. BROOKS. Oh, yes, I think undoubtedly we did. That is, we put in the present capacity of the plant. But that was some time before Mr. Davis testified,—some years, in fact. Now Mr. Davis says that, on account of the increase since 1898, the capacity of this plant must be immediately enlarged.

Mr. MATTHEWS. I do not understand he testified that.

Mr. BROOKS. I submit he did.

Mr. MATTHEWS. Mr. Davis expressed the opinion that the capacity of the plant would in some particulars have to be enlarged to meet the growing consumption, but he did not say

that the consumption had already grown so far as to necessitate an increase. However, we do not object to the competency of the evidence except on the ground that it has already been gone into very fully.

Mr. BROOKS. I understand.

Mr. COTTER. If it is so limited, as last stated by Mr. Brooks,—at first we intended to exclude it,—but limited as now stated by Mr. Brooks, we are inclined to let it in.

Mr. MATTHEWS. Limiting it to what?

Mr. COTTER. That Mr. Davis said it was necessary to increase it immediately.

Mr. MATTHEWS. That it would be necessary, he thought.

Mr. COTTER. Now it has continued a couple of years, three years, since 1898, and it would have some tendency to meet it to show that no increase had been made.

Mr. MATTHEWS. My point is that it has already been gone into. The capacity of the plant has been shown by this and other witnesses, and this witness testified the other day that there had been no addition to the plant since.

Mr. COTTER. We think it will save time to let this in. It is difficult to remember exactly the scope of the evidence.

Mr. MATTHEWS. Yes, sir. I do not care about it.

The CHAIRMAN. It seems to me that this refers to the condition of things since 1898. You see, Mr. Davis said it had got to be increased.

Mr. BROOKS. Yes.

The CHAIRMAN. You offer this evidence to show the condition of things during the last three years?

Mr. BROOKS. Certainly, that the output has increased; just what the capacity is at the present time. We may draw an argument from it in the future.

Mr. GREEN. I don't suppose the capacity is an inch greater than it ever was.

Mr. BROOKS. Now if you will read the question.

(Question read, as follows: "What is the present capacity of the works for output of gas?")

A. Do you mean to go all through in detail?

Q. Well, no; of the coal gas plant and of the water gas plant, and the total of the two, and the present performing capacity of the holders to take care of the output. A. They can manufacture 600,000 feet a day of coal gas, 700,000 feet per day of water gas, making a total of 1,300,000 feet manufactured. We can purify 600,000. We can send out through our present holders 600,000 per day.

Q. So that your total generating capacity is 1,300,000 feet?

A. Yes, sir.

Q. Cubic foot per day? A. Yes, sir.

Q. And now, with the 10 per cent. increase for the last three years, what does it bring your output up to per cubic foot per day? A. An average send-out per day?

Q. Yes. A. About 238,000 feet per day.

Q. Cubic feet per day? A. Yes, sir.

Mr. GREEN. Is that the average?

The WITNESS. The average.

Mr. MATTHEWS. 200 what?

The WITNESS. About 238.

The CHAIRMAN. What is the maximum day at any time within the last three years?

The WITNESS. 432,000 feet in December.

Q. In December, 1899?

Mr. MATTHEWS. 432?

A. Yes, sir.

Q. That was the largest maximum of the three years? A. Yes.

Mr. GOULDING. Did you say December, 1899?

The WITNESS. Yes, sir.

Q. In the climate prevailing in Holyoke, where is the frost line, how far below the surface of the earth? A. In my experience I don't remember of ever striking it below three feet and a half.

The CHAIRMAN. Up in that cold country?

The WITNESS. Yes, sir. I should call that an abnormal depth of frost.

Q. What? A. The $3\frac{1}{2}$.

Q. Yes. A. I should call 3 feet nearer to an average of what I have found.

Q. Yes. And the depth of your trench I think is 4 feet?

A. Yes, sir.

Q. And I don't know that it appears anywhere — I want it to — what is the width of your trenches?

Mr. MATTHEWS. You mean how wide they were, in fact, excavated?

Mr. BROOKS. Yes.

Mr. MATTHEWS. Is that the same, Mr. Brooks? Do you mean to say there was a uniform width? How does this witness know?

Mr. BROOKS. I would like the average.

Mr. MATTHEWS. I beg your Honor's pardon, I pray the judgment of the Court. How can this witness know? Where he knows from his own knowledge, he can testify; but presumably he does not know how wide these trenches were dug forty years ago.

Mr. BROOKS. If he doesn't know, I don't want him to tell. He may confine his answer to what he knows himself, what he has seen.

Q. What do you know of being dug yourself, from your observation, through the various years; what would be the average width? A. Starting with 3 feet wide on the surface, allowing for the slope of the banks, it would be about 1 foot wide at the bottom.

Q. Three feet at the top and one foot at the bottom, — four feet deep, you say, is the average of the trenches? A. Yes, sir.

Q. For all the sizes of pipe? A. Yes, sir.

Q. Mr. Snow, have you made any test to determine how deeply the foundations at the gas plant are laid below the surface of the earth? A. I have, yes, sir.

Q. And what test did you use? A. Went down in the purifier cellar and the lime room cellar.

Q. Yes. A. Digging down in the purifier cellar about 12 feet below the yard level, and sounding 3 or 4 feet below that,

before getting to the bottom of the wall. We stopped digging when we did because we struck water. It was in the time of high water there. In the lime room cellar we couldn't dig over 4 feet deep. We sounded there something over 15 feet.

Q. And of the water gas meter room, did you make any soundings? A. Those are the only two that we sounded in.

Q. You found the depth to be at least 15 feet? A. Yes, sir.

Q. Did you make any tests at the gas tank holders? A. No, sir.

Q. Or of the north wall of the gas meter room? A. No, sir.

Q. How much water do you use at this gas plant aside from that which you use for power purposes? A. I think we use from nine to ten million gallons per year.

Q. About 175,000 gallons per week? A. Yes, sir.

Q. How much lead does it take for the leads of joints of different sizes of pipe? A. For 3-inch pipe we use six pounds; for 4-inch pipe we use eight pounds; for 6-inch pipe we use 12 pounds; for 8-inch pipe, 16; and for 12-inch pipe, 24 pounds to a joint.

Q. How did you ascertain that, by actual weight or otherwise? A. By actually weighing the lead that was in old joints that I have taken out, to see how much we were using.

Cross examination by Mr. MATTHEWS.

Q. Are these the quantities you use now for laying pipes? A. The quantities we used the last day we did lay.

Q. Have you made any additions to the gas works since Jan. 1, 1898? A. No, sir.

Q. There has been no increase in the capacity of the plant since January, 1898? A. No, sir.

Q. You say the maximum output during the past three years was for the month of December, 1899, and was 432,000 feet? A. Yes, sir.

Q. Do you know what the maximum was for any month of any year prior to January, 1898? A. I remember the figure of 420,000 feet prior to that. I would not like to attempt to say the date that was.

Q. Some time prior to January, 1898? A. Yes, sir.

Q. Your maximum output has increased only from 420,000 to 432,000 feet? A. Yes, sir.

Q. What were the total sales of gas last year, the last gas year?

The CHAIRMAN. The quantity, do you mean?

Mr. MATTHEWS. The sales, the total sales, using sales in the gas book-keeping sense, which is quantity.

The WITNESS. About eighty millions, as I remember it.

Q. About eighty millions? A. Yes, sir.

Q. It is correctly stated, I suppose, in the returns of the Company to the Gas Commission?

Mr. BROOKS. He don't know.

Mr. MATTHEWS. Why do you say that? How do you know that he doesn't know?

Mr. BROOKS. Because he said so earlier in the game.

Mr. MATTHEWS. I object to Brother Brooks's interrupting in this way. It is no use to put the question now, after the interruption. I will withdraw it.

Mr. GOULDING. It is hardly fair to intimate that the witness wouldn't tell the truth.

Mr. MATTHEWS. I don't think the witness ought to be interrupted in the cross examination.

Mr. BROOKS. You did it many times and often.

Mr. MATTHEWS. I don't think quite so baldly and boldly.

Mr. BROOKS. Strike out what I said.

The CHAIRMAN. (To witness.) Let me understand. Haven't you added any new mains since 1898?

Mr. MATTHEWS. He testified to that the other day.

The CHAIRMAN. Oh, yes, I remember.

Mr. MATTHEWS. A small number of mains, but no additions to the works.

The CHAIRMAN. That he gave in detail.

Mr. MATTHEWS. Yes, that he gave in detail. I do not care to go over it again. That is all.

Re-direct examination by Mr. BROOKS.

Q. Whether the load upon this plant is more or less uniform than in 1898? A. It is.

Q. It is which? A. More.

Q. More uniform? A. Yes, sir.

Mr. BROOKS. That is all.

Mr. MATTHEWS. That is all, Mr. Snow.

JAY M. WHITHAM, *recalled*.

Direct examination by Mr. BROOKS.

Q. Mr. Whitham, have you made any calculation of the amount of coal that is consumed at the electric light station for both heating and power? A. Yes, sir.

Q. How many tons are used for heating?

Mr. MATTHEWS. I object, on the ground that this was all gone into, or should have been gone into, on the Company's case in chief.

Mr. BROOKS. I think not. This is in view of the testimony of Mr. Manning.

The CHAIRMAN. What?

Mr. BROOKS. This is in answer to the testimony of Mr. Manning and of others as to the amount of coal that was required to heat this station. We did not go into the question of the heating of the station at all in the direct examination.

Mr. MATTHEWS. Is your question confined to the heating of the station, Mr. Brooks?

Mr. BROOKS. My present one.

Mr. MATTHEWS. I will waive the objection, then.

The CHAIRMAN. Answer the question, Mr. Witness.

A. About 50 tons a year.

Q. Have you any further calculation as to the amount of coal required under the present offer, as it stands for power operation? A. Yes, sir.

Q. How much?

Mr. MATTHEWS. Wait one moment.

The CHAIRMAN. "Under the present offer." Now what do you mean by that, Mr. Brooks?

Mr. BROOKS. Your Honors will recall that Mr. Matthews asked us to define our position and, in substance, to amend the first offer that was filed in the City clerk's office; and under that amendment, of course, the number of restricted days as applicable to this particular station is very much reduced. Mr. Whitham had figured upon 22, I think, restricted days originally.

But under the amendment, if I may so express it, to the original offer, the number of restricted days, according to Mr. Winchester's testimony, is reduced to 5 or 6. And the amended offer, as your Honors will recall, came in as a part of our friends' case.

The CHAIRMAN. It came in, rather, after your case was finished.

Mr. BROOKS. Exactly.

Mr. MATTHEWS. I take it, Mr. Brooks, that you will have other questions to ask of this and other witnesses relating to valuation upon the basis of your amended offer?

Mr. BROOKS. You are entirely correct.

Mr. MATTHEWS. We might as well argue the question now. The case for the Holyoke Water Power Company was closed upon Jan. 29, 1900, as indicated by page 446 of Vol. VI. When the case was resumed, Nov. 12, 1900, Mr. Green proceeded to open for the City; and prior thereto a request was made for the Company to define its position upon certain points.

Mr. GOULDING. You read from what page?

Mr. MATTHEWS. I am reading now from page 1 of Vol. VII. There was no request made, to quote my brother's language, for an amended offer by the Company. We are in no sense responsible for their so-called amended offer, and we wish to have no part in it. We reject it as completely and radically as we do the original offer. The Company saw fit to make it through Mr. Gross, a witness who was put on the stand by the Company out of order, and not by us. We had no objection to the corporation's producing that offer at that time, or at the arguments, or at any other time. We have no objection to their making any other suggestions in the nature of further amendments to their original offer that they see fit to do. But what we asked for was a definition of their legal position upon three points specified upon page 1 of Vol. VII. They are:—

“1. Does the Company consent that the Commissioners may include property in the transfer and valuation not specifically described in the schedule filed Jan. 8, 1898? . . .

“2. Does the Company consent that the Commissioners

may vary the terms of the lease of water power offered by the Company in its schedule of Jan. 8, 1898? . . .

"3. What signification, if any, does the Company attach to the difference in phraseology between so much of its offer as relates to the gas and electric light plants and so much of its offer as relates to the rent of water power? . . ."

We desired from the Company a specification, before we proceeded to present our evidence, of their position upon these three points of law, being in substance one, namely, whether or not the Company admitted that the Commissioners had, as matter of law, the power to vary the offer made by the corporation, or whether the Commissioners must accept that offer or reject it in its entirety. We received no reply to that request. None has yet been made. Counsel for the Company stated, when Mr. Gross was put upon the witness stand with their so-called amended offer (perhaps I ought not to use the word "so-called"; it was an amended offer), that they had nothing further to say in reply to our request; that the questions of law raised by that request would be considered by them in the closing argument, and not before. That was their right, of course, and we had nothing further to say about it. Then Mr. Gross, president of the Company, was put upon the witness stand for the purpose of explaining the new offer. He was not our witness or called by us. There was nothing that he said that was called forth or brought forth or occasioned by this request of Nov. 12, 1900. We had, however, then, as I said a moment ago, and we have now, no objection to the Company's interjecting at any stage in this case such amendments or variations of their original offer as they see fit.

So much for the history of this matter. Now it is proposed by my brother to reopen their whole water power valuation case, and to ask their witnesses, beginning with this gentleman, to value the water power contained in their second offer. We submit that that amounts practically to their retrying their case in rebuttal, so far as the question of water rent or the valuation of the water power involved in this case is concerned. I submit that they have no right whatever to do it;

that it will lead to interminable hearings on both sides, being substantially a reopening of the whole question. No harm will accrue to the Company, if it is restricted to the evidence offered by it originally upon the question of water power, because their witnesses, one and all, I think,—certainly most of them,—testified to the value of water power at large, and made computations based upon the use of steam power as a standard of comparison from which they figured out what the relative value of the two modes of power was in the city of Holyoke. Our witnesses endeavored to meet those calculations, so that the Commissioners now have before them, pro and con, the data submitted by the respective parties to this case, from which they can compute, and will be obliged to compute, if they go into these mathematical calculations at all, how much increase in value or decrease in value there must be from a given water rent by varying the conditions as to the number of restricted days. We fail to see that this line of questioning can be permitted now without practically allowing the Company to reopen its case on water power and without giving us the corresponding right, if we should elect to use it, to retry our case, or that part of it, to meet what may be said by these witnesses now.

The CHAIRMAN. Well, Mr. Matthews, allow me to put you a question.

Mr. MATTHEWS. Certainly.

The CHAIRMAN. It is true that they have made this amendment.

Mr. MATTHEWS. Undoubtedly.

The CHAIRMAN. Now suppose the claim on their part is that the amendment gives you something more valuable.

Mr. MATTHEWS. Yes, it does; no question about that. We concede that.

The CHAIRMAN. Now I want to ask you this question: So far as going to show the enhancement over the old, why cannot they put in testimony?

Mr. MATTHEWS. After they have closed their case?

The CHAIRMAN. The trouble is that the amendment reopens it.

Mr. MATTHEWS. It seems to me the Commissioners can follow one of two courses. They can treat this amended offer as presenting a new question of water power; and, if the Company is permitted to give evidence of value on the basis of that offer, we must be permitted in turn to meet that new evidence. But we earnestly submit that it is unnecessary, and will lead, perhaps, to an interminable prolongation of these hearings. Suppose at any stage of the proceedings the Company should see fit to offer another amendment, could they then go on and introduce fresh evidence? Again, should they not have made whatever offers they were going to make, before they closed their case? That point, of course, will be met, if your Honors will reserve to us the privilege of meeting this new evidence. Our main objection is to the indefinite prolongation of the hearings which we foresee.

The CHAIRMAN. We will certainly do that.

Mr. MATTHEWS. Then I do not care to say anything further.

The CHAIRMAN. The trouble in my mind, as I see it, without talking with the other Commissioners, is that I feel that we ought to restrict the line of this testimony so that in no sense shall you be allowed to open up anything that you are already foreclosed on, which you have already put in. Of course, I cannot follow what this witness testified to, but I have a recollection that he did go somewhat into the comparison between steam and water. But that has nothing to do with this case.

Mr. BROOKS. Certainly.

The CHAIRMAN. Now what is the question?

Mr. MATTHEWS. While Mr. Burt is looking for the question, I will say that the end that Mr. Brooks has in mind can be reached in one of two ways. He is trying to get at the difference in valuation between water power on the basis of the second offer and water power on the basis of the first offer. Now he can ask for that point blank: How much does it increase or how much does it decrease the value of the water power that was contained in the first offer? Or he can ask

him what the value of the water power in the second offer is; and that would involve the valuation of the water power in the first offer, too, and a retrying of the whole case, it seems to me.

The CHAIRMAN. That is what, in effect, Mr. Brooks, we want to guard against.

Mr. BROOKS. I do not think that I ought to be restricted to the single question that my friend suggests. May it please your Honors, if you will look at the record, Vol. VII., Mr. Matthews makes a request upon us to define our position, and says that any time before his case is closed — at any time before the case is closed — we can put it in.

Mr. MATTHEWS. Yes, but you have not done it yet.

Mr. BROOKS. Excuse me a moment, until I get through, if your Honor please. We followed his suggestion, and within a week or two we put Mr. Gross upon the stand with this amended offer, which, we say, enhances the value of the power very materially that we offer to the City of Holyoke.

The CHAIRMAN. Show that enhancement.

Mr. BROOKS. But I do not purpose to show it with one answer in figures.

The CHAIRMAN. Oh, well —

Mr. BROOKS. It seems to me I must be allowed to go into some detail in these, in order that the Commissioners may be satisfied.

The CHAIRMAN. Very well. What is the question?

Mr. GOULDING. I should like to call the Court's attention to the very peculiar nature of this case. It has not yet been decided by this tribunal, and probably will not until it has heard the parties, as to the date of when the property is to be transferred. It has not yet been decided as a proposition of law whether we are rigidly confined to the schedule which we filed in the clerk's office in January, 1898, or whether we may enlarge it. There are questions involved there. It has been claimed on the other side, and I presume the claim may be renewed, that we are rigidly confined to that offer, — that no subsequent offer has any force whatever. On the other hand, we contend that we can make a subsequent offer, as

within limits this tribunal can make a change in what shall be transferred. For instance, it certainly can decide, for so much is said in the statute itself —

(They) “shall adjudicate what property, real or personal, including rights and easements, shall be sold by the one and purchased by the other, in accordance with the provisions of this act.”

Well, now, here are some questions that are greatly in detail, several where we are diametrically opposed to each other; and now we, after Mr. Matthews had made his suggestion and used the language that my friend has referred to, found on the fourth page of the volume:—

“As I said, we do not ask any offhand reply to these questions. It will take probably a week or more to put our case in, and any time before we close our case will be sufficient for us to have a reply to these questions; so that, if the Company assents to the proposition that the Commissioners may vary the terms of the lease of water power, for instance, we can meet the case thus changed by the evidence of our experts.”

Now I don't know what the Commissioners are going to decide about that proposition, but we think in view of this request, and perhaps without this request, we think we would have a right to do it; at any rate, we claim that we have a right to do it without this request made, this subsequent offer, which varies to a very considerable degree the use of the water power and its relation to steam power. Now, in view of that, have we not the right to show, not merely the difference between the two, but what the cost would be of the power operated as we proposed under this supplemental offer? It is a question — I want to call your Honor's attention to the peculiar nature of this hearing in that respect. You have got to decide a pretty important question, as to what is going to be sold and what is going to be bought, and as of what date, besides the question of the damages. So that I don't think we ought to be held up to the exact form of the trial of contract cases or tort cases in the Superior Court with great rigid-

ity, because the nature of the inquiry is entirely different, and I submit that your Honors will take a pretty large and liberal view of that question, as long as we have spent so much time as we have already; and perhaps we might consume the rest of the present geological year in this inquiry as well as in any other way, not in any way deprecating the desire that we all feel to get to the end of this thing. When we get to the end of it, we want to be sure that we are at the end of it and we have looked at it from all points of view. I make these suggestions purely with reference to the peculiar nature of this inquiry.

(The stenographer read as follows) :—

“Q. Have you any further calculations as to the amount of coal required under the present offer, as it stands, for power operation? A. Yes, sir.

“Q. How much?”

Mr. GREEN. That I object to on another ground. That is, supposing that the Court has determined to go into this line of inquiry, I object to that question, because it enables the witness to interpret the lease, which I say he cannot do. He cannot say what this lease provides and what it does not provide. He cannot say how many days of restriction it provides for and how many it does not.

The CHAIRMAN. Well, I can state my views, gentlemen, even before consultation. It seems to me that, no matter who called out this request for this change,—and certainly we cannot determine now the legal effect of it,—but, if we at the end conclude that this amendment can prevail, that we then ought to have evidence before us of the value of the water power, based upon that amendment. I don't suppose any of us question that very much. Now, in the mean time, the question is how to approach it in such a way that we can get all the facts, without opening the door to a lot of evidence that has already gone in. I don't, for one, want to embarrass counsel in examining the witness, because he may have prepared his examination based upon the theory that he had a right to;

but I should judge, from what Brother Cotter intimated to me and what Brother Turner thinks, that we should much prefer, if you could, to have him confine himself to the enhancement, and not go into the original scheme. Is that your idea?

Mr. COTTER. Exactly.

The CHAIRMAN. Is that yours, Mr. Turner?

Mr. TURNER. Yes.

The CHAIRMAN. Assuming that the original claim that you prove — assuming that you have proven — put in your evidence, at least, tending to show the extent of your original power, and now you make an amendment, we will say an efficiency of 10 or 15 horse power, or any other valuation in money or material, we want simply the value of that enhancement.

Mr. BROOKS. Perhaps I don't quite comprehend and perhaps I do. Your Honor means that you want simply an answer in dollars and cents as to the enhancement? It seems to me that I ought not to be shut off on that point.

The CHAIRMAN. Certainly.

Mr. BROOKS. Because, as your Honors see, if the days of restriction are less, then the decrease runs all along the line of expenditure and all along the line of the enhancement for its use of water power; and I intend to, if I am permitted to, to present here by Mr. Whitham, and perhaps others, certain schedules which will contain their estimates based upon the theory of five or six days of restriction, if I am allowed to do that.

The CHAIRMAN. You can show, as far as my judgment goes, whatever you please with reference to this change. You can do that in dollars and cents or in the shape of an opinion expressed by the witness as to the effect upon the original power. We will say, for a rough illustration, that we have arrived at the valuation of a certain power, and somebody adds a new engine or so much power or makes changes in the mill. It is that change which we ask you to estimate for us, and not the original valuation. I do not know as I make myself understood.

Mr. COTTER. Yes, I think you do. I think that expresses it very clearly. It is the difference between the estimate of value of the first offer and the amended offer.

Mr. BROOKS. Exactly.

Mr. COTTER. You have produced something that changes the original situation. What is the difference between the two?

Mr. BROOKS. Exactly.

Mr. GREEN. Of course, your Honor would not admit it in that form of question.

Mr. COTTER. No. We pass upon that as the result that you desire to reach,—the difference in value, as I understand, between that which you offered originally and the amended offer.

Mr. BROOKS. Yes, sir, that is what we are intending to show, if we are permitted.

Mr. COTTER. And now, if the amendment is allowed, why, we are agreed here that it ought to be shown to us what the difference is between the original offer and the amended offer.

The CHAIRMAN. As, for instance, to illustrate, how many less pounds of coal you can get along with daily,—things of that kind.

Mr. BROOKS. Yes, that is what I intended to do; and, if I go beyond it, if your Honors will make a suggestion to me, I will endeavor to follow it.

The CHAIRMAN. Or, as Mr. Turner suggests, assume that the restricted days are changed, or something of that kind happens, what is the increased value?

Mr. MATTHEWS. That is the form of question Mr. Green says it ought to take rather than to ask the other.

Mr. BROOKS. It was assumed in the original question. Perhaps in this question it was not, but this is only one of the series.

The CHAIRMAN. I know, but that relates to all the coal that was used; your question related to all the coal.

Mr. BROOKS. All the coal. This question is for power. He stated how much was required for heating.

The CHAIRMAN. I understand; but this relates to the whole plant.

Mr. BROOKS. Certainly it does.

The CHAIRMAN. We think it ought to be limited to the change.

Mr. BROOKS. That is what I thought I was doing.

The CHAIRMAN. Have you made any further calculation as to the amount of coal required, as to the present average as it stands for power operation, would be one question; then your next question should be an assumption.

Mr. BROOKS. Well, you can see, by running back three or four questions, that I did have an assumption of five or six days.

Mr. GREEN. I do not recall it.

Mr. BROOKS. I had it, if you do not. Still, I just as soon —

Mr. MATTHEWS. I think Mr. Brooks's first question did assume a difference in the number of restricted days, but I think it involved an answer which would give the total quantity of coal and not the increased quantity.

The CHAIRMAN. I suppose, if you put your question on the assumption that there are only five or six restricted days, the question may be put to the witness, How much coal is required for consumption there?

Mr. BROOKS. That is just what I intended.

The CHAIRMAN. All right, let us have that.

Q. Assuming, Mr. Whitham, that the restricted days number 5 or 6,— say 6,— what would be, in your opinion, the consumption of coal for power purposes at this particular electric light plant in question?

Mr. BROOKS. Does that meet the suggestion?

The CHAIRMAN. Yes.

A. About 50 tons a year, or, more closely, \$200 worth at \$4.05 a ton.

Q. Have you made tests or done work at paper mills for the purpose of determining the steadiness or the variability of the load? A. Yes, sir, very often.

Q. To what extent have you made paper mill tests for that purpose? A. I have done work in and about 19 different paper mills. I am now and have been for 5 years the consulting engineer of a paper mill, a 30 ton paper mill, on book paper; and in that mill I have made a great many tests measuring the power required by the different machinery in the different departments, and have ascertained the cost of power in the mill for the year, and in other mills, two other mills that I was engineer for for two years, I did the same thing.

Q. Two other paper mills? A. Two other paper mills; and recently I have made quite a thorough examination of the Nashua River Paper Mill at Pepperell in connection with its power features and its load and its variability of load; and in all those 19 mills I have determined to quite a close extent, or quite accurately, the power and the variability of the power.

Q. Mr. Manning in his testimony in substance says that a large part of the exhaust steam of an engine can be used for non-power uses, and that this results in permitting a horse power to be produced on a steady paper mill load by burning $1\frac{1}{4}$ pounds of coal per horse power per hour for power uses. Now, in your opinion, does the use of exhaust steam for heating and other purposes warrant or not such a reduction in coal per horse power hour as Mr. Manning suggests?

Mr. MATTHEWS. Wait a minute.

The CHAIRMAN. It seems to me that is proper.

Mr. MATTHEWS. But should not the question be put in a general form,—ask the witness what his opinion is as to the consumption per horse power hour under those conditions, and not call the attention of his own witness point blank to something some other witness has said?

Mr. BROOKS. Haven't I got the right to ask him whether or not in his opinion the assumptions of Mr. Manning, or his calculations, are correct?

Mr. MATTHEWS. I don't think you have in that way.

The CHAIRMAN. We think in rebuttal you have the right to call his attention. You cannot too sharply define the line. We think your question is admissible.

(The question was read.)

A. It does not.

Q. And why not? A. There is very little use for exhaust steam in a paper mill aside from the paper drying itself, and in almost all paper mills the paper machines are driven either by one engine specially selected for that purpose or else by a separate engine for each machine. Those engines are run non-condensing, and their exhaust is used for drying paper. Those engines are always very wasteful in the use of steam, sometimes using 7 or 8 pounds of coal per horse power per hour; but there is no loss, because they need the exhaust for paper drying. Now there is no other department of a paper mill that would use exhaust, except for heating a little of the stock, either in the beaters or elsewhere. The temperature of exhaust steam is not high enough for the "rotary," for boiling rags or cooking the stock; and in no plant that I have ever visited has any engine that had water for condensing purposes available for use failed to condense its exhaust, except in the case of the little engines that drive the paper machines themselves; and then, on account of the variability of the load in the different departments of the mill, the consumption for the larger engines that drive the beaters, and so on, could never approach such an economic point as that which you have cited.

Q. Do you know of any paper mill equipped with a condenser, or having condensing water available, that would run its engines non-condensing? A. No, sir, except the small engines that drive the paper machines themselves.

Q. From your knowledge and experience in paper mills, how many pounds of coal would be used per horse power hour for an engine developing a 16 mill power load in every day running? A. The most economical engine you could put in, say a Corliss compound condensing, would use from two to two and one-half pounds in every day commercial running.

Q. What is the cost of producing a horse power 24 hours per day per year in a paper mill? A. I found it to be \$65.57 in the paper mill I spoke of, which I have been connected with five years, where coal is \$1.90 a ton. That is, 24-hour power.

Q. So that for coal at the price you have taken, \$4.05, at

Holyoke, what would be the approximate cost? A. Well, I could not answer that right off. I would have to compute that.

Q. It would be, of course, very much more? A. Oh, yes, very much increased, the coal consumption would be.

By Mr. GREEN.

Q. How much did you say that was, that you found it? A. \$65.57, 24-hour power, for a paper mill that used a power of 1,021 horse power. The coal alone at Holyoke, at \$4.05 a ton, as compared with \$1.90, would cost about twice as much. Of course, the total cost of developing power wouldn't be doubled, because labor would be about the same and the fixed charges would be about the same.

By Mr. BROOKS.

Q. In this estimate of \$65.57, as I understand it, you take coal as at \$1.90 a ton? A. \$1.90 a ton.

By Mr. GREEN.

Q. Is that 300 days in a year? A. That is all the working days of the year, including holidays, but not Sundays. In other words, 313 days a year.

Mr. MATTHEWS. Mr. Brooks, may I ask Mr. Whitham a few questions?

Mr. BROOKS. Certainly.

By Mr. MATTHEWS.

Q. That figure you gave was what? A. \$65.57.

Q. Per annum? A. Yes, sir.

Q. For 313 hours? A. For 313 days of 24 hours.

Q. 313 days of 24 hours each. That is the total cost of power, is it? A. Yes, sir, of steam power.

Q. Where was that test? A. That was at a station called Lafayette, a few miles from Philadelphia, on the Schuylkill River.

Q. And coal at \$1.90? A. \$1.90.

Mr. MATTHEWS. That is all.

By Mr. BROOKS.

Q. Now is a paper mill load a steady or a variable load?

A. It is a very variable load.

Q. And have you made observations and tests to determine the fluctuation of a paper mill load? A. Yes, sir, frequently, by taking indicator cards and measuring the power at 5-minute intervals for 24 hours.

Q. What was the result?

Mr. GREEN. What kind of a paper mill is it? Can't you give us that?

The WITNESS. A 30-ton book paper mill.

Q. Which has the more fluctuating load, book paper or fine writing paper? A. Fine writing paper. The finer the paper, the greater the fluctuation.

Q. You made your observations and tests of fluctuations of paper mill load in a book paper mill? A. Yes, sir, and also in other mills; but the one I am speaking of, of which I have the most complete data present, was a book paper mill.

Q. But you have also made it upon fine writing paper mills? A. No, sir.

Q. You have made tests there? A. You asked me, I think, Mr. Brooks, what the fluctuations were?

Q. Yes. A. I found the fluctuations in the beating department to be from a minimum of 300 horse power to a maximum of 810 horse power, with an average of 578 horse power. In the finishing department the load went from a minimum of 78 horse power to a maximum of 140 horse power, with an average of 110 horse power. And in the machine department, the paper machines themselves, the load ranged from a minimum of 260 horse power to a maximum of 364 horse power, with an average of 333 horse power. Taking in those three departments as a unit, the load ranged from a minimum of 638 to a maximum of 1,314, with an average of 1,021 horse power.

Q. Did you make any charts of that paper mill load variation? A. Yes, sir, I have the charts here.

Q. Will you be kind enough to produce them, and show them to the counsel on the other side, first, and then to the Commission?

Mr. MATTHEWS. Let me see. This was a paper mill at Philadelphia?

The WITNESS. A few miles out of Philadelphia, about 20 minutes' ride on the train.

Mr. MATTHEWS. How can the details of a test made at a mill in Pennsylvania be competent?

The CHAIRMAN. We don't care for it, Mr. Brooks. He has already stated the fluctuations.

Mr. BROOKS. Of course, if you don't care for it. It is quite instructive to a person who don't know very much about it.

The CHAIRMAN. He has already stated.

Q. What has been your experience in power measurements and in the testing of plants, Mr. Whitham? A. Up to June of last year, June, 1900, I had made 672 boiler trials to determine the economy in the use of coal, 310 engine trials to determine the economy in the use of steam. And I have found by measurements and otherwise the cost of producing power in 250 power plants.

Q. Do you mean by that water power plants? A. And also in 155 water plants, and that made a total,—since some of these plants had both water and steam,—that made a total of 343 manufacturing establishments, including electric light and trolley stations, and so on.

Q. Is there a difference between so-called tests, test conditions, and every day commercial running? A. Yes, sir, a great difference.

Q. What is it? A. The results vary all the way from 5 per cent. to more than 20 per cent.

By the CHAIRMAN.

Q. To how many? A. To more than 20 per cent., the economy being less under commercial conditions than under the specially groomed conditions. The cost of producing power is greater commercially than on a groomed test.

By Mr. BROOKS.

Q. That is, the cost of producing power by steam? A. Yes, sir.

Q. What is that due to? A. That is occasioned by a variety of causes. I think probably the most important element is the firing. The fireman on one of those groomed tests, or dress parade tests, is an expert, sometimes costing \$35 or \$40 a day, and he watches the fire with the greatest closeness. But, in an ordinary commercial plant, the fireman sometimes doesn't feel as well as at other times. Sometimes he is more attentive than at others, and there is sometimes a variation of 10 per cent. in the results he obtains in successive days. Then, again, the boilers are not always clean. They get scaly.

Q. That is under commercial conditions? A. Under commercial conditions they get scaly on the inside, and sometimes the plant can't be shut down for months after the boilers get coated, in order to clean them. They also become covered with soot, and sometimes the boilers are not cleaned very often,—in certain types of boilers it is only customary to clean the soot once a week. And then there is a difference, when you come to the commercial running per year, due to the shrinkage in the volume of coal. I have seen bituminous coal, such as they use around here, shrink in volume, or in weight, over 13 per cent.

By the CHAIRMAN.

Q. And the neighbors sometimes help? A. Not generally, in a large plant, where they have the coal well cared for. But the difference between the coal you buy and the coal weighed out day by day, and used, I have seen vary in one plant 17 per cent.

By Mr. BROOKS.

Q. That is, under every day running? A. Yes, sir. That is due to the coal depreciating in value by the slow distillation of the volatile matter in it. Then there is another difference, another cause, occasioning a reduction in economy in commercial running. That is, that the valves and pistons of engines are not always kept tight. Take a plant running only

10 hours per day per year. They can't afford to shut down the engine, shut down the power, shut down the mill, to rebore the cylinder or refit the valves in case there is a leakage, and much steam is often wasted in that way. And in my experience in going over these plants it was seldom that I found an engine having perfectly tight valves and pistons, except in plants that were new and had just been brought into a good working condition.

Q. Mr. Main says that in his opinion the loss in the belt is about 2 per cent. Have you had any experience in testing, with reference to determining the loss in belts? A. Yes, sir.

Q. And to what extent? A. I have frequently, on small engines, taken the friction load of the engine itself and its driving pulley, and then I have taken the friction load when the belt was thrown off. Of course, you couldn't throw off the belt from a large engine, but you can from a small engine. And I have never been able to distinguish any difference between the friction of the engine with the belt on or off and out of use, provided the belt was properly applied and properly connected. If the belt was properly connected and properly applied, the loss in belt friction is almost infinitesimal.

Q. Mr. Main also says that the loss by friction in the gears is 5 per cent. Have you made any observations or tests to determine the gear loss by friction? A. Yes, sir.

Q. To what extent? A. The test that, to my mind, was the best that I have made was a test of the water wheel, where I put a friction brake on the horizontal shaft, and measured the load that was generated and transmitted through the gears. I got the efficiency of that wheel to be 80 per cent.,—79 and a fraction,—a scant 80 per cent. A wheel of that make when tested never develops above 80 per cent. efficiency,—that is, even for the power applied to the vertical shaft. That was, I think, the strongest confirmation of the small power that is required to drive a gear which I know of, although I have made tests more or less frequently where the power was transmitted through gears, changing the direction of the shafting, but this wheel test was the most positive proof

that I have made. That is, for properly applied and properly working gears, properly cared for, the loss is very small.

Q. What do you say the loss, if any, is? A. I think that one-half of 1 per cent. would cover any loss in a properly applied and properly operated gear.

Q. Have you recently examined the wheel machinery of the electric plant? A. Yes, sir.

Q. When? A. Last December.

Q. Did you hear Mr. Warner's testimony? A. Yes, sir.

Q. He said, in substance, as I understand it, that the wheel machinery was worn badly and was noisy. What did your recent test show with reference to the wearing and the noise? A. The teeth have worn very little, if at all, as the original tool marks are on them. The gears run almost noiselessly, as gears of that type are bound to do when you have wooden teeth gearing with iron teeth.

Q. Gearing? A. Yes, sir.

Q. Mr. Whitham, whether or not there has been any deterioration in the efficacy of those wheels? A. None at all, in my judgment.

Q. Mr. Warner in his testimony depreciates the boilers 6 per cent. per year, and says the boilers have had very poor care,—rusty all over the outside and with cracked lagging. Did you examine the boilers recently? A. Yes, sir.

Q. And what did you find to be their condition? A. They are in very excellent condition. I have tested these boilers, and I know them to be in good condition, as I got a very fine economic result from the burning of coal under them. I noticed that the lagging was cracked a little, and some of it had scaled off,—that is, the lagging on some of these boilers,—but to put that lagging in its originally good condition would cost not to exceed \$10; and I understand that this repair has been made already. Where the lagging was cracked off, peeled off, towards the lower end of two or three of the boilers, the outside surface of the shell showed superficial rust, about as much as a boiler if unpainted would show if kept in a warehouse and subject to the moisture of the air; but this rust does

not impair the efficiency of the boilers at all, and the boilers are now insured for the full initial, 125 pounds pressure.

Q. How much would the painting cost? A. The painting would cost about \$2.

Q. Mr. Warner in his testimony suggests a cooling tower for this particular plant, if run by steam alone, and the condenser and tower proposed by him is to have a capacity of about 10,000 pounds of steam per hour. Is a cooling tower of such capacity, in your opinion, sufficient? A. It would take a tower twice that size with the present load to handle the peak of the load, a tower and condenser twice that capacity.

Q. To handle the peak of the load of how much? A. The present peak of the load, in the neighborhood of 8 mill powers.

Q. Have you constructed any tables relating to depreciation charges and life of parts of the plant recently? A. Yes, sir.

Q. Will you produce them?

Mr. MATTHEWS. We should object, if your Honors please, on the ground that that line of evidence was very fully gone into on the testimony in chief by the Company.

Mr. BROOKS. We propose to take their own testimony, and show by their own testimony what the good life is, and I have had Mr. Whitham make some tables for that purpose.

The CHAIRMAN. Well, you mean to say the tables were made, assuming the data to be correct.

Mr. BROOKS. Yes, it is a table of comparison, if I remember correctly, of the various experts that have testified in this case.

The CHAIRMAN. Well, isn't it something that can be done by argument?

Mr. BROOKS. Well, I don't think so. It is a legitimate criticism of their witnesses, and I should prefer to have it go into the record; and I do believe that it will be helpful to this Commission in determining the question.

Mr. MATTHEWS. Well, let us see it.

The CHAIRMAN. Let us look at it.

Mr. BROOKS. As I recall it, it is substantially along the lines of such tables as have been introduced by—

Mr. MATTHEWS. Excuse me for one moment. Perhaps we will not object.

Mr. BROOKS. — The other side,—a table of comparison. I don't think they will really object when they have examined them.

The CHAIRMAN. If it is simply an elaboration of the—

Mr. MATTHEWS. I don't know what it is yet, sir.

The CHAIRMAN. Perhaps you better ask him some question, Mr. Matthews.

Mr. MATTHEWS. I would rather find out from an inspection of the instrument, with Mr. Whitham's aid. I think that is quicker.

The CHAIRMAN. All right.

(Counsel examined table.)

Mr. MATTHEWS. I understand what this is now, and we would like a moment to examine Mr. Main's testimony.

Mr. BROOKS. Certainly.

Mr. MATTHEWS. Now, if the Court please, I have looked over this schedule; and, Mr. Brooks, if you will just explain what it is.

The CHAIRMAN. Mr. Brooks, explain it, please.

Mr. BROOKS. I will explain it as I understand it. This is headed the annual depreciation charges in percentages for the electric light and power plants, as made by various witnesses. If I am wrong, I want to be corrected by anybody. If I understand this, Mr. Whitham takes the depreciation testified to by the various witnesses in this case. Then he figures out upon the theory of an annuity what the life of the various parts are as testified to by the various witnesses. It is not going as far as Mr. Chase went in his testimony or as some of their other witnesses went in their testimony. It is for the aid, distinct aid, of the Commission, and showing in a brief form the claims with reference to depreciation of these various witnesses. Now, if I have not stated it right—what

I meant to say is, it shows, we say, that in it is the answer to the testimony of their witnesses as to what the life of this plant really is in its various component parts.

Mr. MATTHEWS. These tables are parts of what Mr. Brooks has said is an attempted answer to the testimony by some of our witnesses on the subject of depreciation. It is an argumentative schedule, and I am inclined to think that we have no objection to it as such. I think, however, that the heading is wrong, and should be corrected; I think Mr. Whitham will agree with me. It represents these annual depreciation charges in percentages for the electric light and power plant as made by various witnesses. Now the figures in these tables are computed by this witness from the testimony of the other witnesses in the case, both for the Company and the City in most instances. In some instances they are taken bodily from the testimony, and in others they are computed; and, when he has got these data, he applies them by his method, and not on the method adopted by our witnesses. For instance, in figuring out his depreciation charges, he compounds at 4 per cent. per annum, annually or semi-annually, Mr. Whitham?

The WITNESS. Annually.

Mr. MATTHEWS. Annually at 4 per cent. Our witnesses did not compound at all, because they took straight percentages and do not believe in the sinking fund theory as applicable to depreciation. These annual payments are very much lower than they assumed as necessary. I think we should have no objection to the introduction of these tables as argumentative tables, or answers even, providing the heading is changed so as to read like this,—see if I am right, Mr. Whitham,—Annual depreciation charges in percentages for the electric light and power plant as computed by — what are your initials, Mr. Whitham?

Mr. WHITHAM. J. M.

Mr. MATTHEWS. As computed by J. M. Whitham from the testimony of various witnesses.

The CHAIRMAN. I cannot see any objection to that.

Q. Would not that be a more accurate description? A. No, I do not think it would be.

The CHAIRMAN. Well, tell them why.

Mr. MATTHEWS. Then we shall object, for this reason —

The CHAIRMAN. I cannot conceive why —

Mr. BROOKS. Will your Honor just let him answer?

The CHAIRMAN. I understand this table is for the benefit of the Commissioners, and you have taken certain statements made by different witnesses and computed them on certain lines, and the table speaks for itself. (To Mr. Matthews.) Now will you reread what you said?

Mr. MATTHEWS. "Annual depreciation charges in percentages for the electric light and power plants, as computed by J. M. Whitham from the testimony of various witnesses."

By the CHAIRMAN.

Q. Why is not that so? A. Because in certain instances it is true and in other instances it is not.

Q. What do you say? A. For instance, take Mr. Main's figures relating to the water power plant. He put in his schedule — I think it is in the first schedule in his testimony — that the depreciation was for seven years 14 per cent. total, which amounted to so much. It is true that in that particular table Mr. Main did not say 2 per cent. a year, but he said seven years, and allowed 14 per cent. as a charge-off; and I have taken it as 2 per cent. per year. Now, then, wherever any witness, either for the City or for the Water Power Company, specifically mentioned the percentage, I have taken that. Wherever a witness did not mention the percentage that he used, but said that this particular article cost, new, so much, and he depreciates it so much, and its age is so long, I have found the annual depreciation in dollars, and divided that by the original cost structurally, and found out what, as a matter of fact, he actually did charge off per year for depreciation. And to that extent the correction, as Mr. Matthews says, ought to be made; but it is not true to say that it is my computation, because, in probably two-thirds of the instances, I have taken the percentages directly from the testimony.

Q. Does the table explain itself? A. Yes, sir.

The CHAIRMAN. Why can't you put it this way: "Memorandum prepared by J. M. Whitham on the question of depreciation"?

Mr. MATTHEWS. I am perfectly willing to let it go that way.

The CHAIRMAN. If the table explains itself, that will certainly take care of it.

Mr. MATTHEWS. The table does not explain itself, and I was trying to get a heading which would avoid cross examination entirely. For instance, in the summary in Tables 1 and 2 there are 28 items. If the word "computed," which I used as being comprehensive, including not only your quotations, Mr. Whitham, from testimony, but also calculations from the testimony, is allowed to stand, I do not think I shall cross examine the witness about it at all. Otherwise, I have got to go into all those data, and see whether our witnesses used those figures or whether they are computations by Mr. Whitham based upon figures which they did not use, on a theory which they did not follow.

Mr. BROOKS. I have no objection to having it just as it is, with a heading stating which were made by the witness.

The WITNESS. It would take some time to pick them all out now.

Mr. MATTHEWS. He says the whole thing is a computation.

Mr. BROOKS. No, it is not.

Mr. MATTHEWS. The witness, Mr. Chairman, gets the life of these buildings by taking our witnesses' percentages where they have given them for annual depreciation, and then translating them into life by means of a compound interest sinking fund. (To witness.) Don't you?

The WITNESS. That is true for Tables 2 and 4.

Mr. MATTHEWS. That is true for Tables 2 and 4. None of our witnesses did that; none of them believed in it; consequently, Tables 2 and 4 are computations by this witness —

The WITNESS. That is true.

Mr. MATTHEWS. — Made up from data which he got from the testimony of our witnesses. That is true, isn't it?

The WITNESS. Yes.

By Mr. MATTHEWS.

Q. What is the difference in 1 and 3, then? A. Tables 1 and 3 are percentages, not years.

Q. Some of the figures in Tables 1 and 3 are computations of yours? A. Some are from computations of mine and some are taken directly from the testimony.

Q. Some of the figures are taken bodily from the testimony? A. Yes, some of them.

Mr. MATTHEWS. I object to the headline as misleading.

The CHAIRMAN. "Annual depreciation charges in percentages for the electric light and power plants" — this is the original — "as made by various witnesses." Now the proposed form is "as computed by J. M. Whitham from the testimony of various witnesses."

The WITNESS. Why not say, "computed or compiled"? That would include both.

Mr. MATTHEWS. "Computed and compiled." Very well, I accept that suggestion — "computed and compiled."

Mr. GOULDING. Where does that come in, after "Plants"?

Mr. MATTHEWS. Strike out the words "made by," and put in "computed and compiled by J. M. Whitham from the testimony of."

The WITNESS. "Computed or compiled."

Mr. MATTHEWS. "Computed or compiled."

Mr. BROOKS. Is that satisfactory?

The WITNESS. Yes.

The CHAIRMAN. With that understanding, the table may be used.

Mr. MATTHEWS. For what it is worth.

The CHAIRMAN. Shall it be printed?

Mr. BROOKS. Yes, sir.

Mr. MATTHEWS. The head note to Table 3 should be changed, I suppose, to be like the heading of Table 1.

(The schedule was marked "Exhibit 276, F. H. B.")

WEDNESDAY, MAY 8, 1901.

[EXHIBIT 276.]

TABLE I.

ANNUAL DEPRECIATION CHARGES IN PERCENTAGES FOR THE ELECTRIC LIGHT AND POWER PLANT,
COMPUTED OR COMPILED BY J. M. WHITHAM FROM THE TESTIMONY OF VARIOUS WITNESSES.

ITEMS.	WITNESSES OF THE HOLYOKE WATER POWER COMPANY.								CITY OF HOLYOKE.			
	Pritchard, II. 30, 188.	Whitham, IV. 214.	H. A. Foster, III. 205.	Newcomb, IV. 272.	Robb, IV. 93, 155.	Allen, V. 205.	Anderson, V. 224, 247.	Green, VI. 17.	Main, XI. Ex. 162.	Warner, IX. 423.	Blood, depreciated for age and condition, X. 259, 275.	Ridlon, XI. Ex. 204, compared with Blood, X. 267.
Hydraulic plant	—	.22	—	.29	—	—	—	—	1.41	1.52	1.27	—
Buildings and chimney	—	.37	—	.36	—	—	—	—	2.00*	2.50	3.21	—
Steam plant (including shafting, pulleys, and belts	—	1.33	—	1.45	—	—	—	—	2.72†	4.05	4.21	—
Electrical equipment	—	2.35	—	2.55	—	—	—	—	—	6.78	5.80	10.12
On the plant as a whole, including land and water privilege	1.43	1.07	1.24	1.01	.81	.95	.82 to 1.09	1.26	—	3.90	3.88	—

* Exclusive of dynamo building.

† Exclusive of shafting, pulleys, and belts.

TABLE II.

PERIOD OF TIME IN YEARS AT THE END OF WHICH THE ANNUAL DEPOSITS AS A DEPRECIATION SINKING FUND WILL, AT 4 PER CENT. ANNUITY RATES, ALLOW THE REPLACEMENT OF THE VARIOUS PHYSICAL FEATURES OF THE ELECTRIC PLANT (EXCEPTING LAND).

ITEMS.	WITNESSES OF THE HOLYOKE WATER POWER COMPANY.							CITY OF HOLYOKE.				
	Pritchard, II. 39, 188.	Whitham, IV. 214.	H. A. Foster, III. 265.	Newcomb, IV. 272.	Robb, IV. 93, 155.	Allen, V. 205.	Anderson, V. 224, 247.	Green, VI. 17.	Main, XI. Ex. 162.	Warner, IX. 423.	Blood, depreciated for age and condition, X. 259, 275.	Ridlon, XI. Ex. 204, compared with Blood, X. 267.
Hydraulic plant	—	75	—	69	—	—	—	—	34‡	32‡	36†	8†
Buildings and chimney	—	64	—	65	—	—	—	—	28	24‡	20†	—
Steam plant, including shafting, pulleys, and belts	—	35‡	—	34	—	—	—	—	23	17‡	17	—
Electrical equipment	—	25‡	—	28‡	—	—	—	—	—	11‡	13‡	—
On the plant as a whole, excluding mill site and water privilege	34	39‡	37	40‡	45	41‡	{ 45 to 39 }	{ 36† }	—	18	18‡	—

NOTE.—The above table does not mean that the life and efficiency of the plant will have ceased at the end of this period; but, if ordinary care is taken of this plant, the life will be much prolonged beyond this period. The value of the plant at the end of this period is not considered in this table.

TABLE III.

ANNUAL DEPRECIATION CHARGES IN PERCENTAGES FOR THE ELECTRIC LIGHT AND POWER PLANTS,
COMPUTED OR COMPILED BY J. M. WHITHAM FROM THE TESTIMONY OF VARIOUS WITNESSES.

ITEMS.	WITNESSES OF THE HOLYOKE WATER POWER COMPANY.						CITY OF HOLYOKE.					
	Landers, VI. 264.	Rivers, VI. 184.	Whitham, IV. 214.	H. A. Foster, III. 283.	Wright, II. 317. Humphreys, II. 214, 268.	Newcomb, IV. 272.	Kirkpatrick, VIII. 13.	Ranger, VIII. 175.	Warner, IX. 425.	Blood's depreciation for age and wear only, X. 259, 275.	Blood's depreciation, based on market values, X. 246, 267.	Main, XI., Exhibit 162. Ridion, XI., Exhibit 204, X. 267.
HYDRAULIC PLANT:												
Head-gates and racks	*	*	0.28	†	0.50	0.64	—	0.63	1.50	1.46	—	1.63
Penstocks	*	*	0.08	†	0.50	0.08	*	—	1.50	1.46	—	1.63
Wheel pit and tailrace	*	*	0.08	†	0.50	0.08	*	0.63	1.50	0.80	—	1.00
Wheel house	0.12	0.05	0.08	†	0.50	0.28	1.35	0.63	1.50	4.51	—	1.00
Tunnels	*	—	0.08	†	0.50	0.08	—	0.63	1.50	0.90	—	1.00
Machinery of wheel house	—	—	0.08	†	0.50	0.28	—	—	2.50	2.86	—	1.63
STEAM PLANT:												
Boiler house	0.09	*	0.08	†	0.50	0.28	0.85	0.63	2.50	2.71	8.49	2.00
Boilers	*	—	1.04	3.36	2.00	1.77	—	—	6.00	5.64	5.77	5.00
Chimney	—	—	0.08	†	0.50	0.08	0.50	0.63	2.50	2.37	2.37	2.00
Flues	—	—	1.04	3.36	2.00	1.77	—	—	6.00	5.64	5.77	5.00

Piping for boilers	—	—	1.04	1.04	2.00	1.77	—	—	—	3.00	2.86	2.86	5.00	0.70
Pumps	—	—	1.04	1.04	2.00	2.39	—	—	—	6.00	5.64	5.77	5.00	
Heater	—	—	1.04	1.04	2.00	1.04	—	—	—	6.00	5.64	5.77	5.00	
Engine house	—	0.09	0.08	0.08	0.50	0.28	—	0.74	0.63	2.50	4.16	9.08	2.00	
Engines	—	—	1.04	1.04	1.00	1.04	—	—	—	3.00	2.86	2.86	2.00	
Piping for engines	—	—	1.04	1.04	2.00	1.77	—	—	—	3.00	2.86	2.86	2.00	
SHAFTING, ETC.:														
Shafting, dynamo building	—	—	0.08	—	2.50	0.64	—	—	—	4.00	5.06	12.09	—	
Shafting in tunnels	—	—	0.08	—	2.50	0.64	—	—	—	2.50	2.86	11.39	—	
Pulleys	—	—	0.64	—	2.50	1.04	—	—	—	4.00	2.30	12.45	—	
Belts	—	—	3.34	—	3.00	4.98	—	—	—	4.00	6.77	—	—	
ELECTRICAL PLANT AND POLE LINES:														
Dynamo house	0.11	0.03	0.08	0.08	0.50	0.28	0.78	0.63	—	2.50	3.13	8.70	—	11.12
Dynamos	—	—	2.39	3.36	3.00	2.39	—	—	—	9.00	8.52	12.33	—	11.07
Switchboards and instruments	—	—	3.34	3.36	2.50	2.39	—	—	—	10.00	5.72	11.50	—	9.00
Meters	—	—	3.34	3.36	2.50	2.39	—	—	—	10.00	2.48	3.46	—	9.28
Transformers	—	—	4.98	3.36	3.00	8.32	—	—	—	10.00	†	—	—	11.12
Spare parts (armatures)	—	—	2.39	3.36	1.00	3.34	—	—	—	9.00	8.52	12.33	—	9.44
Poles and attachments	—	—	8.32	3.36	†	4.98	—	—	—	9.00	4.94	5.23	—	6.45
Wires	—	—	1.77	3.36	2.00	1.77	—	—	—	2.00	3.54	6.37	—	13.78
Lamps	—	—	2.39	3.36	3.00	3.34	—	—	—	10.00	5.70	13.52	—	12.50
Services	—	—	†	3.36	†	2.39	—	—	—	—	1.69	11.12	—	
Tools, etc.	—	—	†	†	†	{ 1.77 4.88 }	—	—	—	6.00	6.27	6.27	—	
Office furniture	—	—	1.77	†	†	8.32	—	—	—	6.00	7.65	7.65	—	

NOTE.—For meaning *, †, etc., consult foot-note of the next table (Table IV.).

TABLE IV.

PERIOD OF TIME IN YEARS AT THE END OF WHICH THE ANNUAL DEPOSITS AS A DEPRECIATION SINKING FUND WILL, AT 4 PER CENT. ANNUITY RATES, ALLOW THE REPLACEMENT OF THE VARIOUS PHYSICAL FEATURES OF THE ELECTRIC PLANT, WITH THE EXCEPTION OF THE LAND.

ITEMS.	WITNESSES OF THE HOLYOKE WATER POWER COMPANY.						CITY OF HOLYOKE.						
	Landers, VI. 264.	Rivers, VI. 184.	Whitham, IV. 214.	H. A. Foster, III. 283.	Wright, II. 317. Humphreys, II. 214, 268.	Newcomb, IV. 272.	Kirkpatrick, VIII. 13.	Ranger, VIII. 175.	Warner, IX. 425.	Blood, for age and wear only, X. 259, 275.	Blood, based on market value, X. 248, 267.	Main, XI., Exhibit 162.	Ridlon, XI., Exhibit 204. and Blood, X. 267.
HYDRAULIC PLANT:													
Head gates and racks	*	*	70	†	56	50	—	50	33	34	—	31	—
Penstocks	—	—	100	†	56	100	—	—	33	34	—	31	—
Wheel pit and tailrace	*	—	100	†	56	100	*	50	33	45	—	41	—
Wheel house	103	88	100	†	56	70	35	50	33	16	—	41	—
Tunnels	*	*	100	†	56	100	—	50	33	43	—	41	—
Machinery of wheel house	—	—	100	†	56	70	—	—	24	22	—	31	—
STEAM PLANT:													
Boiler house	98	*	100	†	56	70	45	50	24	23	94	28	—
Boilers	—	—	40	20	28	30	—	—	13	13½	13	15	—
Chimney	*	*	100	†	56	100	56	50	24	25	25	28	—
Flues	—	—	40	20	28	30	—	—	13	13½	13	15	—
Piping for boilers	—	—	40	40	28	30	—	—	21½	22	22	15	—

Pumps	—	—	—	25	—	—	13	13†	13	15
Heater	—	—	—	28	—	—	13	13†	13	15
Engine house	98	*	—	40	—	—	24	17	9†	28
Engines	—	—	—	56	47	—	21†	22	22	28
Piping for engines	—	—	—	40	—	—	21†	22	22	28
SHAFTING, ETC.:										
Shafting, dynamo building	—	—	—	30	—	—	—	—	—	—
Shafting in tunnels	—	—	—	28	—	—	—	—	—	—
Pulleys	—	—	—	24	—	—	18	14†	7†	—
Belts	—	—	—	24	—	—	24	26	—	—
	—	—	—	21†	—	—	18	11†	7	49
ELECTRICAL PLANT AND POLE LINES:										
Dynamo house	90	108	—	70	46	—	24	21	9†	—
Dynamos	—	—	—	25	—	—	9†	9†	7	—
Switchboards and instruments	—	—	—	25	—	—	8†	13	7†	—
Meters	—	—	—	25	—	—	8†	24	19†	—
Transformers	—	—	—	10	—	—	8†	†	†	—
Spare parts (armatures)	—	—	—	20	—	—	9†	9†	7	—
Poles and attachments	—	—	—	15	—	—	9†	15	14†	—
Wires	—	—	—	20	—	—	9†	15	12	—
Lamps	—	—	—	28	—	—	28	19†	12	—
Services	—	—	—	20	—	—	8†	13	6†	—
	—	—	—	21†	—	—	—	31	7†	—
Tools, etc.	—	—	—	†	—	—	—	—	—	—
Office furniture	—	—	—	†	—	—	13	12†	12	—
	—	—	—	†	—	—	13	10†	10†	—

NOTE.—† denotes that depreciation is cared for by the annual expenditures for current repairs and renewals.

* denotes that no depreciation was noticed on Jan. 1, 1898.

Warner's column relates to "apparent depreciation," IX. 470, X. 15; and the "actual or operative value" of the plant would show a further shortening of the life, IX. 471.

Ridlon's column relates to life of parts based on his schedule in XI., Exhibit 204, as compared with Blood's estimates of new structural values, X. 267.

In 1898 the hydraulic plant was eight years old, and the remaining portions seven years. (Kirkpatrick's schedule, VIII. 13.) See note at foot of Table II.

The CHAIRMAN. If the table is self-explanatory, Mr. Brooks, of course you do not care to have him go into details.

Mr. BROOKS. I thought I should like to have him state to your Honors very briefly the plan he has pursued in getting up these tables, and if he has a final result.

The CHAIRMAN. All right.

Mr. MATTHEWS. I thought they spoke for themselves, but still —

Mr. BROOKS. I have forgotten what my question was.

The CHAIRMAN. Simply to explain in a general way —

By Mr. BROOKS.

Q. Mr. Whitham, the tables regarding which I started to ask you before the interruption came are tables for what purposes? A. Tables showing the percentages of annual charge-off for depreciation for the various parts of the electric plant and also from the annuity tables, the corresponding life.

Q. And the data for these tables is the evidence of the various experts in the case? A. Yes.

Q. Now will you be kind enough to explain those various tables to the Commission, tell the processes that you pursued and the results that you arrived at? A. Tables 1 and 3 relate to percentages; Tables 2 and 4 relate to life. Table 1 is a summary of Table 3; Table 2 is a summary of Table 4. Wherever in the testimony, as I said a minute ago, a witness specifically mentioned an annual depreciation charge in per cent., I have taken that per cent. Wherever in the testimony a witness failed to specifically mention the per cent. per annum that he did charge off, but did, as a matter of fact, charge off a certain amount in dollars for depreciation, I have ascertained by subtraction the difference between the structural value new and the depreciated value; *i.e.*, how much, as a matter of fact, the witness did depreciate the particular article in dollars. Now, then, dividing that total depreciation in dollars by the number of years of life up to January, 1898, gave an annual depreciation in dollars, which he virtually made whether he used the percentage charge or not. That annual depreciation in dollars, for the

particular article, I have divided by the witness's structural value new for the article, as of January, 1898, as given in his testimony, and found out what actual per cent. per annum he did charge off.

Q. For depreciation? A. For depreciation; and those computations are entered in Tables 1 and 3. Now just what proportion of all the entries in Tables 1 and 3 were computed and what proportion were taken bodily without computation, I cannot tell at the present time, unless I go over every item in detail.

Q. But you do arrive at the percentage by the division that you have already spoken of? A. Yes, sir.

Q. The actual percentage per annum of depreciation? A. Yes, sir. Now, after those percentages were obtained, I have applied them to the annuity table mentioned on page 302 of Vol. IV. of Mr. Newcomb's testimony, and found out what would be a corresponding age or life in years, or a period of time at the end of which —

Q. At what per cent.? A. 4 per cent.

Q. And does 4 per cent. run all through the various calculations? A. Yes, sir. 4 per cent. is the basis for Tables 2 and 4.

Q. Proceed with the explanation that I interrupted. A. Turning to Table 3, you see "boiler house" under the heading of "Steam plant." Mr. Landers's depreciation for that building per year was an average of 9-100 of 1 per cent.

Q. 9-100? A. Yes, sir. Mr. Rivers did not allow anything for depreciation; that is, in his estimate he saw no depreciation. He stated specifically, "No depreciation." In my own estimate, I found a depreciation of 8-100 of 1 per cent.

Q. That is, in your testimony? A. In my testimony. Horatio A. Foster allowed nothing for it. Mr. Wright allowed $\frac{1}{2}$ of 1 per cent.; Mr. Newcomb, 28-100 of 1 per cent.; Mr. Kirkpatrick, 85-100 of 1 per cent.; and Mr. Ranger, 63-100 of 1 per cent.; Mr. Warner, $2\frac{1}{2}$ per cent.; Mr. Blood, 2.71 per cent. And I want to state with reference to Mr. Blood's figures, as given here in depreciation, that this percentage is for wear and age only.

Q. That is, this 2.71 per cent. that is Mr. Blood's depreciation does not include, so far as your table is concerned, any depreciation that he allowed for by advancement in the art? A. No, but in the next column he depreciates it 8.49 per cent., taking into consideration the market value; that is, depreciation for all purposes, wear and tear, and I think he said extensions. The buildings were too large; he depreciated —

By Mr. MATTHEWS.

Q. That column includes the other column, doesn't it? A. It follows what Mr. Blood had,— two columns.

Q. But Blood's second column includes the figures in the first column, doesn't it? A. Blood's second column includes the depreciation for everything, therefore it includes the depreciation in the first column.

By Mr. BROOKS.

Q. Yes. A. Mr. Main's depreciation on that was 2 per cent. Mr. Ridlon did not give any depreciation. Now those comparisons, or the comparisons between the various witnesses on the various items mentioned, are shown in the table. Take, for instance, the subject of transformers in Table 3. I depreciated them 4.98 per cent. a year; Horatio Foster, 3.36 per cent.; Messrs. Wright and Humphreys, 3 per cent.; Mr. Newcomb, 8.32 per cent.; Mr. Warner, 10 per cent.; Mr. Blood did not depreciate them at all; and Mr. Ridlon, 9.28 per cent. Now, in order to find out Mr. Ridlon's depreciation, since he only testified as to their value at the present time, I compared his value as of January, 1898, with the initial value, structurally new, for January, 1898, given by Mr. Blood. Now, if those various percentages are referred to the 4 per cent. annuity rates, the apparent life of the transformers would be as follows, in Table 4: 15 years by Whitham, 20 years by Horatio Foster, $21\frac{1}{2}$ years by Humphreys and Wright, 10 years by Newcomb, $8\frac{1}{2}$ years by Warner, no depreciation by Blood, and $9\frac{1}{2}$ years by Mr. Ridlon.

Q. Will you just wait a second? Now go on. A. The boiler house which I mentioned a moment ago, if applied to the

annuity table, would show (see Table 4) a life of 98 years by Landers, 100 years by Whitham, 56 years by Wright and Humphreys, 70 years by Newcomb, 45 years by Kirkpatrick (Mr. Kirkpatrick, in his testimony, stated that the life was 132 years; but, when you apply his annual charge-off to an annuity table, it shortens the life from 132 years to 45 years); Mr. Ranger, 50 years; Mr. Warner, 24 years; Mr. Blood, 23 years in one estimate and $9\frac{1}{2}$ years in the other; and Mr. Main, 28 years.

Q. Now is there anything further in your explanation that you desire to say? A. I think the tables speak for themselves, sir. There is one other point I might mention. Take the plant as a whole, and apply the total percentages of depreciation to the annuity tables, you get a total life as follows, Table 2: Prichard, 34 years; Whitham, $39\frac{1}{2}$ years; Foster, 37 years; Newcomb, $40\frac{1}{4}$ years; Robb, 45 years; Allen, $41\frac{1}{2}$ years; Anderson, from 39 to 45 years; Green, $36\frac{1}{2}$ years; Warner, 18 years; Blood, on a depreciation for age and condition only, $18\frac{1}{4}$ years.

Q. Do any of these tables have the signification that the life and efficiency of the plant will not cease at the end of these various periods? A. No, sir. They simply mean that those deposits will, at the end of those times, aggregate a fund or sum sufficient to replenish the plant,—renew it.

Q. That is, whatever its condition may be at the end of those periods? A. Yes, sir.

Q. Your tabulation simply signifies that, taking the various testimony that has been given here by the various experts, a certain sum of money will have been stored up at the end of the period necessary to erect a new plant? A. Yes, sir.

Q. Did you make any tests in Massachusetts of the variability of a paper mill load? A. Yes, sir, a 36-hour test.

Q. Where? A. At Pepperell, the Nashua River Paper Company's mill, in which we took indicator cards measuring the power at short intervals for 36 continuous hours.

Q. What other industry than the furnishing of electricity for lighting purposes could, in your opinion, resulting from your

knowledge and experience, be conducted upon this land that is occupied by the electric lighting plant, using the full 16 mill powers of water? A. An electric street railway station, a phosphorus works, and, in my opinion, a paper mill of about 12 to 14 tons daily capacity, a fine writing paper mill, and a dye works and finishers' establishment.

Q. And when you say it could be located there and operated, using the full 16 mill power, do you mean profitably operated? A. Yes, sir.

Q. Have you any knowledge or experience with reference to the electro-chemical industries? A. Only in a general way. I think that there are a number of those, in addition to the phosphorus one which I mentioned; but I am not so familiar with them, and therefore I did not mention them.

Q. Well, have you a knowledge gained in your profession with reference to the amount of power required in comparison with the space occupied? A. Yes, sir.

Q. Of the electro-chemical industries? A. My information is that, in the space occupied by that table in front of you, there can be utilized 1,000 horse power in an aluminum furnace. You could do the same thing in a phosphorus furnace of that size.

Q. And would that be substantially true of the other electro-chemical processes? A. Whether to that extent or not I do not know, but according to my information it is true. I do not think that the small space covered by those desks would utilize a 1,000 horse power or 16 mill power in some of those other industries; but the land offered is ample in area for them, according to my information.

Q. And to use the full 16 mill powers? A. Yes, sir.

Q. Mr. Whitham, I show you Exhibits 213, 214, and 215, which show the time, as I understand it, when the water has been out of the first level canal? A. Yes, sir.

Q. Have you made an examination of those? A. Yes, sir.

Q. And with what result as to determining the average number of days per annum when the water is out of the first level canal?

Mr. GREEN. It probably is my own fault, but I do not understand what the question means and just what it refers to. I do not know what the exhibits are.

Mr. BROOKS. You can look at them. You put them in the other day.

Mr. GREEN. Very likely, but I cannot remember them by the numbers.

The WITNESS. Exhibit 213 relates to the days other than Sundays and holidays when the water is out of the first level canal, and averages for eleven years 4.43 days of 24 hours.

By Mr. MATTHEWS.

Q. That is exclusive of Sundays and holidays? A. Yes, sir. Exhibit 215 relates to the Sundays and holidays on which the water was out of the canal a portion or all of the time. The duration is not given. The average for 11 years was 9-10 of a holiday per year. That is, the water was out of the canal 9-10 of a holiday a year; that is not quite one holiday per year.

Q. What is the number or the aggregate? A. That is the average.

Q. The average number of occasions? A. In other words, in 11 years the water was out of the canal on a total of 10 holidays, or a little less than one holiday a year; but the duration, as to whether it was 1 hour or 24 hours, is not given.

By Mr. BROOKS.

Q. But assuming that it covers the whole 24 hours — A. It would be 9-10 of a day —

Q. It would, then, be less than one holiday a year? A. Yes, a year. That is, for holidays other than Sundays. Now the average for Sundays, for the 11 years —

Q. When the water is out of the canal? A. When the water is out of the first level canal for some time during the day was 24.6 Sundays per year, a little less than half of the Sundays of the year. Exhibit 214 gives in detail when the water was out of the first level canal on days other than Sundays and holidays. In other words, it is a detail of Exhibit 213.

And according to that exhibit there were 5.3 days of 24 hours each per year in the average for 11 years when the water was out of the canal other than Sundays and holidays.

Q. I have forgotten between what years they range. A. 1890 to 1900, both inclusive. I have now given a description of the exhibits. In connection with this last exhibit, 214, I ascertained how many days a fireman would have to be employed at the electric light station, knowing that he would have to be there to get up steam, and, if the plant was shut down during the 12 hours of Sunday, I have also charged his time; that is, if there was water out of the canal at sunrise on Sunday morning or before sunrise Sunday morning, so that they would run, say, from midnight Saturday night till daylight Sunday morning by steam, and did run by steam power again that Sunday night, I included all that time of shut-down, 12 hours Sunday shut-down, as part of his time, and I found for the 11 years that a fireman would have been employed $7\frac{1}{2}$ days per year on an average of 24 hours each.

Q. In company with Messrs. Main and Allen, you made certain friction tests? A. Yes, sir.

Q. And when I say you made certain tests,— by whom were they made? A. The station was under the control of Mr. Samuel Winchester, and we all co-operated in the tests.

Q. Now what is the number of that exhibit? I want to know the number of the exhibit. A. Do you mean Mr. Main's exhibit?

Q. Yes. A. It is printed in the advance sheets of Vol. XI. I don't remember the number of the exhibit. It is in Mr. Main's schedule 26.

Q. What is that number? A. Mr. Main's schedule is No. 26.

Q. No. 26 of the testimony? A. That is not the number of the exhibit.

Q. Have you a copy of it? A. I have a copy.

Q. Just show it to Mr. Matthews, and, if he agrees that it is correct, I will use it. Is this Mr. Main's? A. Yes, sir.

(Copy produced and handed to Mr. Matthews.)

Mr. MATTHEWS. Mr. Main's schedule 26. These pencil figures on the schedule are your figures instead of his?

The WITNESS. Yes, sir.

(Mr. Main's schedule, Exhibit 181, was produced by the stenographer.)

Q. You have a copy, Mr. Whitham? A. I have a copy of Mr. Main's schedule 26, yes, sir.

Q. (Handing witness Exhibit 181.) Will you just look this over, and then I want to return it to Mr. Haskel. A. Yes, that is it.

Q. What is that exhibit? A. It is schedule 26.

By Mr. MATTHEWS.

Q. What Exhibit? A. Exhibit 181.

Mr. GREEN. That is right; I have it right here.

By Mr. BROOKS.

Q. I show you, Mr. Whitham, Exhibit 181, which is a record, I take it, of the friction tests made by yourself, Mr. Main, and Mr. Allen at the present electric plant? A. Yes, sir, it is Mr. Main's record.

Q. Very well, Mr. Main's record. And what does that record show in its results?

Mr. MATTHEWS. I object to that.

The CHAIRMAN. It is already in, and we understand it.

Mr. BROOKS. I don't understand that it is, may it please your Honor. Perhaps I haven't made myself clear. I purpose to show by this very record a variance of more than 100 per cent.

The CHAIRMAN. All right. You mean in Mr. Main's testimony?

Mr. BROOKS. Certainly, in Mr. Main's schedule.

The CHAIRMAN. Then this witness can criticise that.

Q. Take this Exhibit 181, which is what Mr. Main put in as friction tests made by him at this particular plant,—in what month, December? A. Dec. 27, 1900.

Q. In December, 1900.

Mr. MATTHEWS. December 23.

The WITNESS. Dec. 23, 1900.

Q. Dec. 23, 1900, and what does it show in results?

Mr. MATTHEWS. Well, now!

The CHAIRMAN. He has got to do that to criticise Mr. Main.

Mr. MATTHEWS. It seems to me that to ask one witness to state what the testimony of another witness shows is an irregular line of questioning.

The CHAIRMAN. I don't think it is, Mr. Matthews, strictly speaking.

Mr. MATTHEWS. What it shows can be stated by counsel, and this witness can be asked what his ideas of the right figures are.

Mr. BROOKS. I am going to stick to my question.

Mr. MATTHEWS. I never heard such a question asked.

The CHAIRMAN. I don't see how an expert is going to testify in criticism of another man's testimony, unless he has the power to come to certain conclusions with reference to it. I think the witness may answer the question. It is admitted.

The WITNESS. It shows a variation of 100 per cent. in friction between the different measurements.

Q. How do you determine that? Explain it. A. By comparing the friction as ascertained by steam measurement with the other results as ascertained by the water measurement, and there is a variation of about 30 to 35 per cent. between the steam measurements themselves for the same thing. That is on the basis of Mr. Main's exhibit, without reference to my figures.

Q. What is the cause of that tremendous variation? A. Inaccuracies, I suppose.

Q. Inaccuracies of what? A. Inaccuracies of measurements. It is almost impossible to measure with precision,—for instance, the power that is generated by the water wheel when the gate is just the least bit open,—and it is almost impossible to measure with great precision small powers on a large engine, because, when the engine was carrying the total load that was put on, the total friction load put on it, the power wasn't very large, hence the indicator cards were quite small, and, again,

there are errors in the indicator springs and in the apparatus for taking the indicated power; and not only errors in connection with the instruments, but there are personal errors that come into all observations. No two people would take an indicator card and go around it five times each, and each separately and with the same instrument, and get exactly the same area; and the power is proportionate to the area.

Q. What conclusion do you draw as the result of this tremendous difference? A. About the only conclusion I can see is that the engine friction is somewhere in the neighborhood of 8 or 10 per cent., the friction of the engine itself, aside from the friction of the shafting, of the various portions of the shafting. The results are very unreliable and not determinate at all. For instance, the minimum friction (as shown) of all the shafting is 17 horse power and the greatest is 47 horse power. There is a difference of 30 horse power between the friction of the shafting driven as measured by steam power, when compared with water power; and the friction of all the shafting when driven by steam power, in one series of power tests, was 47, according to Mr. Main,—47 horse power,—and in another was 33 horse power. I don't know which is right and which is wrong, or whether they are both right or both wrong.

Q. What is that last? I didn't catch it. A. I say I don't know which is right and which is wrong, or whether they are both right or both wrong, or one right and the other wrong.

Q. Whether or not these tests as introduced by Mr. Main are reliable at all for determining anything? A. I don't think a test that will vary 100 per cent. is reliable. There was no load on the station,—simply the dead friction of the station,—so there was no variation of the load.

Q. Have you made any tables with reference to the friction test? A. Yes, sir, in which I have compared the results obtained by Mr. Allen and me with the results computed by Mr. Main. In other words, I have included Mr. Main's exhibit, transcribed it from his table.

Q. Will you let me see that? That is, you have tabulated the determinations from the tests made on December 23 by you

and Mr. Allen, and compared it with determinations made from tests on the same day by Mr. Main? A. Yes, sir.

Q. Have you one of these? A. I have one.

Q. And this table (showing) shows not only the determinations, but the details? A. Yes, sir.

Q. That result in the determinations? A. Yes, sir.

Mr. BROOKS. I will introduce that now.

(Marked "Exhibit 277, M. A. P.")

[EXHIBIT 277.]

FRICITION TESTS MADE AT THE ELECTRIC LIGHT AND POWER STATION, HOLYOKE, MASS., ON SUNDAY, DEC. 23, 1900, BY MAIN, DEAN, BELL, ROBB, ALLEN, AND WHITHAM. (CONSULT SCHEDULE 26 of C. T. MAIN'S TESTIMONY.)

DETERMINATIONS MADE WITH	ENGINES.		WHEELS.	
	Allen and Whitham. H. P.	Main. H. P.	Allen and Whitham. H. P.	Main. H. P.
DETERMINATIONS MADE BY				
Friction of day load shafting (2a-1a)	20.70	25.77	} 18.90	17.00
Friction of street arc shafting (2c-2b)	1.72	3.89		
Friction of commercial arc and incandescent shafting (2b-1a)	17.30	17.32	14.70	16.00
Friction of all shafting in dynamo building (2c-1a)	39.72	46.98	} 33.60	33.00
Same (2c-1a-1b)	36.67	34.07		
Friction of day load and street arc shafting	22.42	29.66	18.90	17.00

Friction of all shafting:

Main's steam tests 46.98 H. P. and 34.07 H. P.

Main's water test 17.00 H. P. and 17.00 H. P.

Error 29.98 H. P. 17.00 H. P.

DETAILS OF FRICTION TESTS MADE AT THE ELECTRIC LIGHT AND POWER STATION, HOLYOKE, MASS., ON SUNDAY, DEC. 23, 1900, BY MAIN, DEAN, BELL, ROBB, ALLEN, AND WHITHAM. (CONSULT SCHEDULE 26 OF C. T. MAIN'S TESTIMONY.)

DETERMINATIONS BY	Allen and Whitham. H. P.	Main. H. P.
ENGINE TESTS:		
1a. Engine A, no load except belt and receiving pulley	43.97	39.26
1b. Engine B, no load except belt and receiving pulley	36.80	40.36
Total friction of two engines, their belts, and driven pulleys	80.77	79.62
2a. Engine A, driving day load shafting	64.67	65.03
1a. Engine A, no load except belt and receiving pulley	43.97	39.26
Friction of day load shafting	20.70	25.77
2b. Engine A, driving day load, commercial arcs, and incandescent light shafting	81.97	82.35
1a. Engine A, no load except belt and receiving pulley	43.97	39.26
Friction of shafting for day load, commercial arcs, and incandescent lights	38.00	43.09
Friction of day load shafting	20.70	25.77
Friction of shafting for commercial arcs, incandescent lights	17.30	17.32
2c. Engine A, driving all shafting except wheel shafts, end of line formerly used by street railway, and two intermediate lines	83.69	86.24
2b. Engine A, driving day load, commercial arcs, and incandescent lights shafting	81.97	82.35
Friction of street arc light shafting	1.72	3.89
2d. Both engines driving shafting in (2c)	117.44	113.69
Friction of both engines and their belts and receiving pulleys	80.77	79.62
Friction of day load, commercial arc, incandescent, and street arc shafts	36.67	34.07
Same obtained by subtracting 1a from 2c	39.72	46.98
Difference	3.05	12.91

WHEEL TESTS:		
Wheel No. 2, on day load shafting	16.00	13.00
Wheel No. 1, with shafting to first clutch and cross drive to first clutch	20.00	18.00
Wheel No. 1, on commercial arc shafting	24.00	23.00
Friction of commercial arc shafting	4.00	5.00
Wheel No. 3, on incandescent shafting	30.50	29.00
Wheels Nos. 1 and 3, on commercial arcs and incandescent lights shafting	54.70	52.00
Deducting twice wheel No. 1 and its tunnel shaft	40.00	36.00
Friction of shafting for commercial arcs and in- candescent lights	14.70	16.00
Deducting friction of commercial arc shafting . .	4.00	5.00
Friction of incandescent shafting	10.70	11.00
Wheel No. 3, driving all shafting used for maxi- mum load; <i>i.e.</i> , day load, commercial and street arc, and incandescent shafting	53.60	51.00
Friction of wheel and tunnel shaft (No. 1 wheel)	20.00	18.00
Friction of day load, commercial and street arc, and incandescent shafting	33.60	33.00
Deduct friction of commercial arc and incan- descent lights	14.70	16.00
Friction of day load and street arc shafting . .	18.90	17.00

AFTERNOON SESSION.

Mr. BROOKS. May it please your Honors, I would like to interrupt Mr. Whitham's testimony, if I may be permitted, by calling another witness, who will take but a few moments, if there is no objection.

Mr. MATTHEWS. There is no objection.

WILLIAM C. WOODWARD, *sworn*.

Direct examination by Mr. BROOKS.

Q. Mr. Woodward, what is your full name? A. William Carpenter Woodward.

Q. And your residence is Providence, R.I.? A. Providence, R.I.

Q. And what is your business? A. Electrical engineer with the Narragansett Electric Lighting Company, in the main; I also have private interests outside of that in the electrical field.

Q. Just a little bit louder, if you please. A. I also have private interests in the electrical field outside of my connection with the Narragansett Electric Light Company.

Q. Who is president of the Narragansett Electric Light Company? A. Mr. Harvey E. Wellman is president, Mr. Marsden J. Perry is vice-president and general manager.

Q. And is Mr. Perry also the manager of the Union Railway Company at Providence? A. Managing director.

Q. And whether or not you are consulting engineer for him in that capacity? A. I am consulting engineer for Mr. Perry in his electrical interests outside of the Narragansett Company, although not in the employ of the companies with which he is connected.

Q. Have you not only an intimate knowledge of the Narragansett Company, but of the Union Railway Company of Providence? A. I am acquainted with the electrical conditions of both companies.

Q. And how old are you, if you do not mind giving away your age? A. I shall be 40 on my next birthday.

Q. And how long have you been engaged in the electrical field? A. Just about 20 years.

Q. And where was your education obtained in electrical science? A. With the Brush Electric Company, with the Brush-Swan Electric Company, the Thomson-Houston Company, in the first ten years of my connection with the electrical field. For the last ten years I have been with the Narragansett Electric Light Company, except that there was about one year that I was independent.

Q. Just what is your connection with the Narragansett Electric Company? A. Their electrical engineer.

Q. And you have been in that capacity ten years? A. Not as electrical engineer. I was assistant superintendent for a matter of four years; and for the past six years I have been their electrical engineer.

Q. Are you a member of any society of electrical engineers? A. I am a member of the American Institute of Electrical Engineers, an associate member.

Q. Are you acquainted with Robert L. Warner? A. I am.

Q. And have you had any business relations with Robert L. Warner? A. To a considerable extent.

Q. And in what way? A. Mr. Warner has been quite a frequent visitor to Providence in the interests of the Westinghouse Electric Company. I met him in that connection. He has been a salesman representing that company there for some years.

Q. You met him as a salesman? A. Yes, as a salesman representing that company.

Q. Did Mr. Warner ever do any engineering work for the Narragansett Electric Light Company? A. He did no engineering. He made sales of the apparatus.

Q. Did he ever install any apparatus in the Narragansett Electric Light Company or plan for any such installation? A. Not since I have been with them.

Q. And you have been with them for ten years? A. About ten years.

Q. How much in amount of sales, in all, has Mr. Warner made to the Narragansett Electric Light Company? A. In dollars and cents?

Q. Oh, I don't mind about the cents, but within some dollars. I don't care about absolute accuracy, but approximately. A. Approximately about a thousand kilowatts in generator equipments, and I should think 1,500 kilowatts in transformer equipments.

Q. How much would that be in dollars? A. Roughly, in the neighborhood of \$50,000.

Q. And what is the total valuation of the Narragansett electric equipment?

Mr. GREEN. Just a moment. I object.

Mr. COTTER. Why do you offer that, Mr. Brooks?

Mr. BROOKS. In contradiction of Mr. Warner, may it please your Honor.

Mr. GREEN. Is that anything that I brought out in direct examination?

Mr. COTTER. A collateral issue?

Mr. BROOKS. Certainly. He put this in as a part of his qualification.

Mr. GREEN. Where?

Mr. BROOKS. In his testimony. I don't know what page it is.

Mr. GREEN. You mean the direct testimony?

Mr. BROOKS. Certainly.

Mr. GREEN. That he had sold to the Narragansett Electric Company?

Mr. BROOKS. Yes. He claimed that he was the engineer, in his direct testimony, of the Narragansett Company.

Mr. COTTER. Now we have got past that.

Mr. BROOKS. And he claims, as I understand it, that he sold them substantially all the equipment they had.

Mr. MATTHEWS. We do not understand it that way.

Mr. BROOKS. That is all right. I am only telling my understanding. Now I purpose to show, if I am permitted, that he sold about \$40,000 out of \$1,000,000 of electrical equipment valuation.

Mr. GREEN. I am very confident that I asked Mr. Warner no question, and nothing was said about what he had sold to the Narragansett Company or any other company; and, if there was any testimony in regard to the sale of apparatus, it was brought out in cross examination.

Mr. BROOKS. And, moreover, may it please your Honors, he testified certainly that he installed a part of the Narragansett machinery,—that he sold them a part; and haven't I got a right to show how slight a part it was? ♦

Mr. GREEN. He didn't testify in direct examination.

Mr. BROOKS. It doesn't make any difference whether direct or cross.

Mr. GREEN. I submit it does make a difference whether direct or cross.

Mr. BROOKS. If you will excuse me, perhaps I can refer you to the page.

Mr. COTTER. It appears now he did sell, and sold to the extent of \$40,000 or \$50,000. I think the Commission will take judicial notice that that does not comprise the whole plant of the Company.

Mr. BROOKS. If they will go further, and take judicial notice that it only comprehends a very minute fraction of it, I won't ask the question.

Mr. COTTER. Well, I think we will be safe in saying that \$40,000 or \$50,000 would comprise only a small portion of any large company.

Mr. GREEN. My objection went to the testimony in regard to making sales. I was trying to follow the testimony, and I object to all of it in regard to sales. He did say something in regard to installing some portion of a plant, but he did not in his direct testimony, so far as I can see or recall, say anything about sales. I do not think we should go into it.

Mr. BROOKS. Of course, I do not suppose it makes any difference, as long as he qualified along the line of the Narragansett plant; it wouldn't prohibit me, even if he qualified in his cross examination, from showing how small it was.

Mr. COTTER. As bearing upon the extent of business he was familiar with, this witness says he sold property for that company only to the extent of about \$50,000. It seems to us, Mr. Brooks, that that is far enough.

Mr. BROOKS. Very well. Of course, your Honors will recall that Mr. Warner claimed he was an engineer, and not a salesman.

Mr. COTTER. Yes.

Mr. MATTHEWS. Mr. Warner did not deny he sold apparatus for the Westinghouse people. On the contrary, he said that was what he had done.

Q. Mr. Woodward, what was Mr. Warner's connection at any time with the Union Railway Company of Providence, if he had any? A. The same as the Narragansett Company, salesman of the apparatus of the company he represented,—the Westinghouse Company.

Q. How much of the apparatus in value did he sell the Union Railway Company of Providence, approximately, in dollars? A. About 1,000 kilowatts.

Q. What would that be in dollars? A. From \$20,000 to \$25,000.

Q. Was he ever consulted as an engineer? Did he ever act as an engineer, mechanical or electric, for the Union Railway Company? A. Not to my knowledge.

Q. For the last ten years? A. It has only been within the last two years that he has had any dealings with them at all, I think.

Q. And that was as a salesman? A. A salesman.

Q. Did he ever install or plan the installation of machinery for the Union Railway Company of Providence? A. Not to my knowledge.

Q. Well — A. I am very well acquainted with what is going on there, although, as I say, not directly in their employ.

Q. For how many years has your acquaintance extended with the Union Railway Company? A. The past three or four years intimately. Before that I had simply known what was going on there, as I was in the plant probably three or four times a week. I had no close connection with them until the past three or four years.

Q. How old is the Union Railway Company of Providence electrically? A. About nine years.

Q. How old is the Narragansett Electric Company of Providence electrically? A. I should say about fourteen years. I may be in error there. I have only been there nine or ten years. I will make a correction in that connection. They are older than that. They are about nineteen years. I think they began their business in about 1882.

Q. How many systems of distribution have you for the Narragansett Electric Light Company, or, rather, how many systems of distribution does the Narragansett Electric Light Company have?

Mr. GREEN. I object.

Mr. COTTER. It seems to us that is rather remote, Mr. Brooks, as we remember the evidence.

Mr. BROOKS. It is in contradiction of Mr. Warner, who testifies, may it please your Honor, that a certain system is the system that is in common use, and, as I recall it, he referred to the Providence Company.

Mr. COTTER. It was brought out in cross examination, wasn't it?

Mr. BROOKS. I think not, may it please your Honors. I think in direct examination, because he developed his ideal system in his direct examination. I cannot refer you to the page. I do not know that I can to the volume. Of course, his testimony covered a good many pages.

Mr. COTTER. I do not undertake to say. My impression was it was on cross examination.

Mr. GREEN. I do not understand that Mr. Warner based any testimony upon any system of the Narragansett Company, — if that is the name of it.

Mr. BROOKS. I submit —

Mr. GREEN. He alluded in his qualifications to the fact that he had installed, as he used the term, a part of some plant in the Narragansett Company.

Mr. BROOKS. I submit he based his entire valuation upon a comparison with an ideal plant.

Mr. MATTHEWS. What has that got to do with the Narragansett plant?

Mr. BROOKS. He said that good engineering required a certain system; and in his examination, as I recall it, he picked out the Narragansett Company of Providence as having that ideal installation, and as an example which he set up for us to follow in this case.

Mr. GREEN. I think it would be well to show us some such testimony as that. I cannot answer for all that was asked or said in cross examination of the witness, but I have quite a decided recollection of what was put in in direct testimony.

Mr. BROOKS. If I am required to specify the page, in order to get this testimony in, I cannot do it, because I haven't it before me.

The CHAIRMAN. You are not expected to do that altogether.

Mr. BROOKS. I am only telling your Honors what my understanding of the testimony is of Mr. Warner.

Mr. COTTER. To save time, gentlemen, we have come to this conclusion, that the inquiry may be made on the assumption that the evidence was as Mr. Brooks states. If it was not, if this was not brought out in direct examination, why, we are not going to consider it. We do that in order to save your examining the records to see just what the evidence was.

Mr. MATTHEWS. We think, Mr. Chairman, that when counsel for the petitioner are putting in their rebuttal testimony, and ask a witness a question for the purpose of contradicting something that has been said for the defence, it is incumbent upon counsel for the petitioner to point out the statement on the report which he seeks to contradict.

Mr. BROOKS. Counsel for the petitioner never will do it.

Mr. MATTHEWS. Because counsel for the petitioner cannot in this instance.

The CHAIRMAN. It is our business to remember the testimony, of course.

Mr. BROOKS. I beg pardon?

The CHAIRMAN. It is the business of the Commission to remember the testimony.

Mr. BROOKS. Well, I hope so. I am stating my memory of it.

The CHAIRMAN. My memory of this testimony is that upon cross examination this man was asked to cite cases, and he gave this one.

Mr. BROOKS. Exactly, but what difference does that make, because he stated in the beginning that he had an ideal plant in his mind, or in his mind's eye, which he used by comparison to obtain the value of this plant. Didn't I have the right in cross examination to ask him where his ideal plant was, and, if he picked out Providence, haven't I got a right to contradict him?

The CHAIRMAN. I was about to say the same thing, but you chose to argue with me.

Mr. BROOKS. I beg your Honor's pardon: I thought you had finished.

The CHAIRMAN. It seems to me, from my recollection and the recollection of the other Commissioners (conferring with Commissioners),—very well, I think it is competent.

Mr. MATTHEWS. We don't want Mr. Brooks's statement to go unchallenged in reference to the Narragansett Electric Light Company.

The CHAIRMAN. If it turns out to be erroneous, the evidence will go for nothing then.

Mr. BROOKS. Will you repeat my question?

Mr. GREEN. Will you repeat the question? I would like to save an exception to this.

The CHAIRMAN. Yes.

(Question read, as follows):—

“Q. How many systems of distribution have you for the Narragansett Electric Light Company, or, rather, how many systems of distribution does the Narragansett Electric Light Company have?”)

Mr. BROOKS. You are to answer that.

A. In the main, in general, two.

Q. What are they? A The direct and the alternating.

Q. How many different direct current systems have you?

The CHAIRMAN. Well, Mr. Brooks, I would like to know, to come right down to hard pan, is this inquiry by you to ascertain the condition of the Narragansett Company or to contradict this witness?

Mr. BROOKS. It is to contradict this witness, and I would like to refer your Honors to pages 475, 477-78, inclusive.

Mr. GOULDING. Vol. IX.

Mr. BROOKS. Vol. IX., where he criticises our plant very strenuously; says that the system that they have there—

Mr. MATTHEWS. The Narragansett plant is not mentioned in those pages, is it?

Mr. BROOKS. No, but it has been mentioned before.

Mr. MATTHEWS. We should like to see it. Mr. Warner says there were some things that he recommended for use in the Holyoke in the Narragansett plant. That is my recollection of his testimony. Now, when counsel for the other side are putting in their case in rebuttal, if they have anything to contradict, they should point it out. I think that is the usual rule.

The CHAIRMAN. Yes, I think it is.

Mr. MATTHEWS. I don't think the statement of the Chairman is entirely justified, that it is the duty of the Commission to remember all these things. It seems to me to be the duty of the counsel who is putting in his case. We think we assumed that burden in putting in our defence, and endeavored to discharge it by referring the Commission to the evidence we attempted to meet; and it seems to me the other side should do the same. If Mr. Warner anywhere said the

standard plant, not the ideal plant, because we never intended to construct anything like that, but a standard plant, and we never understood Mr. Warner ever said anything of the sort, — if he did, counsel ought to be able to point it out.

The CHAIRMAN. Well, we certainly don't want the details of this Narragansett plant, only so far as it contradicts Mr. Warner.

Mr. BROOKS. I did not mean to go into any detail.

Mr. MATTHEWS. We should want to go into the detail, if you start it.

Mr. BROOKS. Well, that don't scare us.

Mr. MATTHEWS. No.

The CHAIRMAN. Will you be kind enough — it seems only fair, under these peculiar conditions, for you to point out, and suspend this examination of this witness until you can, the testimony of Mr. Warner with reference to this particular plant.

Mr. BROOKS. Well, I don't know as I can. It takes up a volume here, suspended and put on, suspended and put on again. I presume I can find it. And I think perhaps your Honors will remember that there was a time in Mr. Warner's testimony when he objected to stating the concerns for which he had acted as engineer.

The CHAIRMAN. I don't remember it.

Mr. BROOKS. And afterwards it was stated. My impression is that it came in there in that list. I will see. It must be in Vol. X.

Mr. GREEN. I think you will find it along between pages 116 and 120 of Vol. X.

Mr. BROOKS. Well, perhaps I can change my question and avoid this discussion.

Q. Mr. Woodward, whether or not it is good engineering practice to install the two systems, alternating and direct systems, or only the alternating system?

Mr. GREEN. Is that the question?

Mr. BROOKS. That is my question.

(Question read.)

Mr. GREEN. I object to it. I think it is part of their direct case.

Mr. BROOKS. Not at all. It is brought out through Mr. Warner.

The CHAIRMAN. I think that is competent. Your ideal plant,—you inquired about that.

Mr. GREEN. Yes, but part of the petitioner's direct case is the fact that they have a plant with a certain number of systems. They have an alternating and direct system; they are both run together. They testify it is worth so much, and is good practice. We criticise it by saying it is not. We simply meet it by introducing their direct testimony.

The CHAIRMAN. I recall some witness demonstrating a better system than what was there. They produced what was there, actually there, and you produced what was not. Now they offer to show what you produced is either good, equal to theirs, or not so good, as the case may be; and that, we say, is competent.

Mr. GREEN. My suggestion as to the impropriety of the evidence rests upon the ground that our statement is an answer to their direct examination, and not a new suggestion; that they have stated that their plant is as good as new, because it is all right and up to date, and they value it as such.

The CHAIRMAN. Of course, they do. They claim that system as they put it in is a correct system, but you then thereupon say no: you can produce something more modern, something more economical; and you produce your system, and it is developed, and I suppose this evidence is for the purpose of meeting that.

Mr. BROOKS. This, I think, is the very question we objected to.

Mr. MATTHEWS. Read the question.

(Question read as follows):—

“Q. Mr. Woodward, whether or not it is good engineering practice to install the two systems, alternating and direct systems, or only the alternating system?”)

Mr. MATTHEWS. Now, if that question is asked for the purpose of contradicting anything Mr. Warner or Dr. Bell said, we object to it, on the ground that no answer the witness could give would contradict their testimony. They made no general abstract statements such as are indicated by that question. They said that a certain system was commercially proper for such a business as was being done by the electric light station at Holyoke, but I did not understand any witness for the City to lay down a general proposition such as is at the basis of the pending question.

The CHAIRMAN. The difficulty about that is, Mr. Matthews, that, of course, we have not carefully analyzed your testimony. It is very difficult for me myself, as one of the Commission, to note the distinction. Now counsel, acting in good faith, think that this evidence tends to contradict your testimony. If it does not, we won't use it. Of course, we don't want to open a new branch of evidence.

Mr. BROOKS. I think perhaps your Honors may recall that this very question was asked Mr. Warner by us, as to whether — what good engineering practice would demand in 1898.

Mr. MATTHEWS. In Holyoke, for the Holyoke plant.

Mr. BROOKS. I don't know whether this is of the Holyoke plant or not. I don't care. My memory is that it was not, but it don't make any special difference; and they said that the one system — they said one system they reckoned their model plant, or ideal plant —

The CHAIRMAN. You say this is in contradiction of their model plant?

Mr. BROOKS. Yes, sir.

The CHAIRMAN. And a new scheme was suggested?

Mr. BROOKS. Yes.

The CHAIRMAN. We admit it.

(Question read as follows) : —

“Q. Mr. Woodward, whether or not it is good engineering practice to install the two systems, alternating and direct systems, or only the alternating system? ”)

Mr. COTTER. You may answer.

A. It would depend entirely on the local conditions of the city or town in question.

Q. Take a city of the size of Holyoke, with substantially 46,000 or 47,000 people, with 57 miles of streets, and what would you say? A. As I recollect the situation in Holyoke, I think the combination of the two systems would be advisable, perhaps.

Q. Would that be your opinion? A. In a situation identical with that that we have in Providence, it would be my opinion.

Q. Yes. And what is the population of Providence, about —

Mr. COTTER. Has he answered the Holyoke question, Mr. Brooks?

Mr. BROOKS. I don't know.

Mr. COTTER. I don't know that he has.

Mr. BROOKS. Well, I will withdraw what I said.

Q. Mr. Woodward, take the situation in Holyoke, whether it would be good mechanical engineering to have the two systems or to confine it to the one alternating system?

Mr. GREEN. Just a moment. It does not appear that this witness knows what the situation is in Holyoke. Nobody has asked him.

Mr. COTTER. Well —

Mr. GREEN. I think the form of answers that he has previously given casts a doubt on whether he does or not.

Mr. COTTER. That is a proper inquiry, unless you put a hypothetical question.

Mr. BROOKS. Well, I will, if he doesn't know. I think he does know.

Q. Mr. Woodward, do you know of the conditions prevailing in Holyoke,— population and miles of streets and the area of distribution generally? A. I am not acquainted with the population. As far as geographical location is concerned, and the arrangement of the streets and general arrangement of the city, I am fairly well acquainted.

Q. And what do you say is, in your opinion, good engineering, the one alternating system or the two alternating and direct systems? A. I should be inclined to use the combination of the two.

Q. Yes. When did the series enclosed arc lights first come into commercial use? A. Within the past two years, a little over two years.

Q. Well, that would take us back to 1898. What time in 1898? In — in 1899. Very well, take it back to 1899.

Mr. MATTHEWS. Does he mean 1899? That is your year.

Mr. BROOKS. What do you mean by my year?

Mr. MATTHEWS. Why the witness has not said anything about 1899.

Mr. BROOKS. He said it would take it back two years, and I said 1898; and now I say 1899. I corrected myself.

Mr. MATTHEWS. You said 1899. The witness didn't say anything about it.

Mr. BROOKS. Well, when you are through, I will go ahead.

Q. What year did the series alternating enclosed arc lamps come into commercial use? A. The first installation the last part of 1898.

Q. And where? A. And from that time on it increased very rapidly.

Q. And where, in the latter part of 1898? A. As far as I know, Hartford is the original plant.

Q. And when did the constant current transformers first come into commercial use? A. That was coincident with the series alternating enclosed lamps.

Q. The latter part of 1898? A. Series enclosed alternating currents.

Q. And when did the series direct current enclosed arc lights come into commercial use? A. About the same time.

Q. That is, the fall of 1898? A. Well, a little later than that, as my recollection serves me.

Q. Well, about when? A. Within two or three months after the series alternating lamps were introduced, the series direct current, I think, were introduced here in Boston.

Q. Well, do you remember what year? A. I can't recall that date definitely.

Q. Will you say it was later than the fall of 1898? A. Yes, it was, I should say, in the spring of 1899, possibly in the late winter of 1898.

Mr. BROOKS. That is all.

Cross examination by Mr. MATTHEWS.

Q. Mr. Woodward, you used the word "salesman" in reference to Mr. Warner. Do you know what position he occupies with the Westinghouse Company? A. At the present time?

Q. Yes. A. He is the New England manager, manager of their New England office.

Q. You said there were two systems of distribution in the Narragansett plant. What systems had you in mind? A. The direct and alternating systems.

Mr. BROOKS. I understood that was ruled out, may it please your Honors.

Mr. MATTHEWS. It has got in now.

Mr. BROOKS. My friend objected, and it was ruled out.

Mr. COTTER. Well, we can't remember it.

Mr. BROOKS. If they want to put it in, I am very glad of it.

Q. What two systems had you in mind, Mr. Woodward? A. The direct and alternating current systems.

Q. What system had you in mind for contrasting as a single system with this double system? A. I don't quite understand the question.

Q. You said, as I took it down, that whether you would install one or two systems would depend on local conditions. Now what was the one system that you would hesitate about in contrast with two systems? A. I should install two

against either of the other ones. That is, I wouldn't install complete either one of the others.

Q. That is, you would say a combination, under certain conditions, would be better than either alone? A. Yes, sir.

Q. Now you said that your choice would depend upon local conditions? A. Yes, sir.

Q. What local conditions would you wish to be informed of in making your choice? A. Depending on the proximity of the generating plant to the territory, the district, that was to be covered or supplied.

Q. Anything else? A. That would really be the chief factor.

Q. Would the amount of business or the different sorts of business that the company was doing be a factor you would want to know? A. With the combination of the two systems, the greater variety of business would be supplied.

Q. But in electing between the combination system and the single system, you would wish to know what the conditions were with respect to output of the various classes of electrical energy? A. That would affect it to some extent, too.

Q. Are there any other circumstances you would wish to be informed of? A. From the mechanical side of the question, there would be other points to be considered; that is, the cost of the generating power and such matters as that.

Q. You would want to be informed of these various factors, and understand what they were, before you reached an opinion as to the sort of system you would install in a given locality, would you not? A. It would be well to be informed on all the points.

Q. Do you know anything about these various facts that you have mentioned in Holyoke? A. Except that I know they have some street lighting and lighting of buildings in the part of the city I have been about in; that is, from the station up to the territory upon the hill, the streets upon the hill.

Q. Do you know anything more about the Holyoke situation than that? A. I know where the local lighting station

is at the present time, or the last time I was there. As to the number of lights they have in the streets, I am not familiar with that.

Q. Do you know the extent of their distribution system?

A. What?

Q. Are you familiar with the extent of their distribution system? A. I do not know how far out they go.

Q. Do you know what the cost of generating power is?

A. I do not.

Q. Do you know what the output for the various classes of distribution is? A. I do not.

Q. Then you haven't got in mind the facts you would wish to have in order to draw up a scheme for lighting the city of Holyoke? A. Not as far as detail is concerned.

Q. Do you use direct connected units at the Narragansett Company's plant? A. We have some direct connected.

Q. When were they put in?

Mr. BROOKS. I was excluded from this line of inquiry, under the very vigorous objection of my friend.

Q. Perhaps I will get at it in another way. What was the apparatus Mr. Warner sold you for the Narragansett Electric Lighting Company? A. Two direct connected units, alternating apparatus, and transformer apparatus, static transformer apparatus.

Q. When were you in Holyoke? A. Not within the last three years. Just about three years ago.

Q. You haven't been there for the purpose of examining the plant in reference to testifying in this case? A. No. I have been there within three years, but not in connection with this case. I have been there two years ago this month,—two years ago in April.

Q. Have you at any time visited the electric light station of the Holyoke Water Power Company for the purpose of forming an opinion? A. I have not been in that plant for about three years.

Q. Have you at any time made an examination of the electric lighting station of the Holyoke Water Power Company for the purpose of forming an opinion? A. I have not.

Q. I understood you to say that the enclosed arc lamps, the enclosed series of lamps, came into commercial use first in 1898 in Hartford?

Mr. BROOKS. In the fall, wasn't it? He didn't say so, that they first came in. He said in the fall of 1898.

Mr. MATTHEWS. He said first in 1898.

Mr. BROOKS. All right. I beg your pardon.

Q. Is that so? A. The alternating current series of arc lamps, as far as I know, were first used in Hartford.

Q. That was in 1898? A. In 1898.

Q. What time? A. September or October is as near as I can recall. I know it was in the fall of the year. I know that.

Q. That was when they were actually installed, was it not? A. They had one equipment that they used at that time.

Q. What do you mean by one equipment,— one lamp? A. One unit, which was installed there experimentally, I think, at that time.

Q. How many lamps? A. I think they had 50. I think it was a 50-light unit.

Q. Now take up the case of direct connected arc lamps: when do you say they were first used commercially? A. About the same time.

Q. I mean the enclosed arcs. You understand I am speaking about the enclosed arcs? A. The series of direct current enclosed arcs, about the same time.

Q. And the first instance was in Boston? A. The first time I saw them was here.

Q. The first time you saw it? A. Yes.

Q. When were you here? A. I am here, on an average, twice a week, as a rule, excepting during summers. At that time I was following it up very close, to decide between the two systems.

Q. Sure you have got the date right? A. I have reason to believe so.

Q. Haven't you got it a year later than it should have been?

A. I don't think that I have got the date misplaced more than thirty days.

Q. Don't you think, on reflection, that it was in the autumn of 1897 that the enclosed arc lamps were first introduced by the Boston Electric Light Company upon the streets of Boston?

A. I don't believe it was as far back as that.

Q. Did you make an examination of the arc lamps that the Boston Electric Light Company was installing for parks in 1897? A. Installing where?

Q. For the parks, in 1897? A. I didn't see the equipment on the street. I saw their first experimental work in the station. I don't know where they were used outside, where the circuit went outside.

Mr. BROOKS. What year?

Mr. MATTHEWS. In 1897.

Mr. BROOKS. Did he say 1897? I didn't so understand it.

Mr. COTTER. We didn't understand it so.

Mr. BROOKS. I wish you would ask him what year, Mr. Matthews.

Mr. MATTHEWS. Read the last questions and answers.

(Questions and answers read by stenographer.)

Mr. GREEN. I don't understand that he said 1897, but it might be taken so.

Mr. MATTHEWS. Well, it is admitted that he didn't mean 1897.

Q. Would your business, Mr. Woodward, that brought you to Boston twice a week, take you out on the parks? A. Very seldom.

Q. And you wouldn't know, then, whether the Boston Electric Light Company had been running a whole series of enclosed arc lamps way back in 1897? A. I shouldn't know of their being operated in the parks, but I should know what was going on in the station.

Q. Are you aware that they began to experiment with enclosed arc lamps way back in 1894? A. The enclosed arc lamp was experimented with and used direct current fully as far back as that.

Q. Did you ever hear that the Boston Electric Light Company entered into a contract with the city of Boston to change all open arc lamps to enclosed arc lamps? A. I didn't quite understand the question.

(Question read.)

Mr. BROOKS. I object to the question.

Mr. COTTER. On cross examination it may be admitted.

Mr. BROOKS. I don't know whether he ever heard of the contract or not. The contract, I suppose, would be the best evidence, really. It comprehends, doesn't it, the contents?

Mr. COTTER. On cross examination we will let him answer that question.

Mr. MATTHEWS. Go ahead.

The WITNESS. I did not know that any contract was entered into.

Q. Do you know what date that contract was entered into? A. I do not.

Q. I don't know as you understood my question, Mr. Woodward, about your visits to Holyoke. Have you ever been to Holyoke in connection with this case? A. I never have.

Q. For the purpose of forming an opinion as to what sort of a plant they ought to have, or for any other purpose? A. I never visited the Holyoke station except from personal motives entirely. Nothing in connection with this case.

Q. And that had no connection with forming an opinion as to what sort of a plant they ought to have? A. None whatsoever.

Re-direct examination by Mr. BROOKS.

Q. How many alternating systems do you have in Providence? A. Two.

Q. One for incandescent and one for street lighting?

Mr. MATTHEWS. Wait one moment. I thought when I asked a similar question it was objected to and dropped.

Mr. BROOKS. Oh, no. He answered it.

Mr. COTTER. I think that was answered, Mr. Matthews.

Mr. GREEN. I understood that was ruled out.

Mr. BROOKS. You say you asked it yourself.

Mr. MATTHEWS. I asked it and you objected, and I dropped it.

Mr. BROOKS. Your Honor will recall that I did object, and your Honor said that on cross examination you would let it go in.

Mr. MATTHEWS. That was about this other matter; that was let in on cross examination. Your statement with reference to cross examination was more recent, your Honor.

Mr. COTTER. I think that is so, Mr. Matthews.

Mr. MATTHEWS. That question that I asked was admitted on cross examination.

Mr. BROOKS. He told you that he had two systems in Providence, and now I am asking him how many lighting systems they have. Excuse me a minute. My friend oughtn't to kick against the pricks, because of anything it means.

Mr. MATTHEWS. We don't want to kick against the pricks. We are willing to go into the whole outfit and installation of the Narragansett Electric Lighting Company, and I was starting to do it with this witness; but I understood that objection was made and the Commission ruled against me, and I dropped it.

Mr. GREEN. We understood it was dropped. Mr. Matthews asked me some question with reference to it, and we supposed it was at rest. We stopped on the examination we purposed going into, because —

Mr. COTTER. I do not think we intended to rule against you on that; that was my impression.

Mr. MATTHEWS. We do not care to object to Mr. Brooks's questions, if we understand that we have the opportunity to go into the installation of the Narragansett Electric Lighting Company.

Mr. BROOKS. I don't want to have much fuss about this—

The CHAIRMAN. Mr. Brooks, I, for one, don't care to hear any more about the Narragansett Company. It is a purely collateral question.

Mr. BROOKS. It is all right, if they have not opened it.

The CHAIRMAN. Mr. Matthews stopped as soon as it was suggested, as I remember.

Mr. BROOKS. If your Honor will read the record to-night, I think you will find that I am correct. However, it makes no difference. I will withdraw it.

Q. I understood you to tell us, Mr. Woodward, that direct series enclosed arc lamps came into usage about the first of 1899? A. Not far from that time.

Q. I understood you to say to Mr. Matthews — I may have misunderstood you — that that system had been in existence and in use as early as 1894? A. Not in commercial use.

Q. Not in commercial use? A. Simply in an experimental and discarded way.

Q. What do you mean by "discarded way"? A. It was found unsatisfactory. The art was not far enough progressed, and the system was given up.

Q. I understood you to say to Mr. Matthews that Mr. Warner was now the manager of the New England office of the Westinghouse Company? A. Has been for some months.

Q. And how long since he became manager of the New England office? A. I should say the first of this year.

Mr. BROOKS. That is all.

JAY M. WHITHAM, *resumed.*

The WITNESS. I would like to make a correction of Exhibit 277.

By Mr. BROOKS.

Q. Is that the friction test sheet? A. Yes, sir.

By Mr. MATTHEWS.

Q. That is the one you submitted just before the adjournment? A. Yes. The first page of that sheet contains a summary. At the end of that tabular summary is a note relating to the friction of all the shafting, and I see that, when bringing the figures down from the tabular statement above, I brought down the last line instead of the line before the last, so that the differences in the figures would be as follows:—

The next to the last line should read,

Main's Water Test 33.00 H.P. and 33.00 H.P.

Then, by subtracting, the last line should become,

Error 13.98 H.P. and 1.07 H.P.

And that would change a statement that I made with reference to the table before recess, to the effect that the differences between the tests, instead of being 100 per cent., would be in the neighborhood of 82 per cent.

By Mr. BROOKS.

Q. Will you be kind enough to change the figures upon the exhibit, so far —

Mr. GREEN. We object to having them changed upon the exhibit.

Mr. MATTHEWS. Yes.

Mr. GREEN. We claim that there is a different explanation of this.

Mr. BROOKS. Upon the exhibit that we have put in?

Mr. GREEN. Yes.

Mr. BROOKS. Very well.

Q. Mr. Whitham, will you be kind enough to-night to make up a new tabulation which shall correct that mistake to which you have testified? A. Yes, sir.

Q. And I will put that in as another exhibit. What is the significance of this wide divergence between friction tests?

A. Well, I can see only one thing,— that it is an inaccurate test. It does not determine what is the friction. I do not know which one of these numerous tests is right and which is wrong, or whether any one is right. I got the same difference on my computations, substantially, that Mr. Main did on his.

Q. This was the same test, was it not,— the same test?

A. Yes, sir, the same test.

Q. The one that you have referred to as taking place Dec. 23, 1900? A. Yes, sir.

Q. When you were all present? A. Yes, sir.

Q. Now who had charge of that test? A. The test was run according to a programme formulated by the City, and the only limitation upon it was that the plant should be ready for doing the night lighting as the evening came on. Mr. Winchester ran the plant, throwing on this line of shafting or that, just as Mr. Main wanted done. All the indicator cards were taken by Mr. Main's assistants. All the readings that were taken for the speed or for head and fall from the first level to the second, and so on, were taken by Mr. Main or his assistants; and those readings were verified by Mr. Allen or Dr. Robb or myself or some one else, so that we had really duplicate information, except with reference to the indicator cards, and those were divided, Mr. Main keeping every other one and giving me every other one.

Q. Is there anything further that you care to say with reference to these friction tests and the tabulation of them?

A. Yes, there is one thing more. The difference is 40 per cent. Just a few minutes ago, while Mr. Woodward was on the stand, I made some hurried computations. I see it is 40 per cent. instead of 80 per cent.

By Mr. GREEN.

Q. Is this the same 100 per cent.? A. Yes, sir, it is reduced down to 40.

Q. Won't you reduce it again? A. No.

By Mr. BROOKS.

Q. On the basis of 40 per cent., what does this wide divergence signify? A. It signifies that the friction of the shafting may be one or the other or neither result.

(The corrected tabulation of friction tests above called for was subsequently produced by the witness and introduced as Exhibit 278, being as follows) :—

[EXHIBIT 278.]

CORRECTED SUMMARY TO EXHIBIT 277, RELATING TO FRICTION TESTS OF DEC. 23, 1900.

DETERMINED BY	ENGINES.		WATER WHEELS.	
	Allen and Whitham. H. P.	Main. H. P.	Allen and Whitham. H. P.	Main. H. P.
Friction of day load shafting (2a-1a)	20.70 }	25.77 }	18.90	17.00
Friction of street arc shafting (2c-2b)	1.72 }	3.89 }		
Friction of day load and street arc shafting	22.42	29.66	18.90	17.00
Friction of commercial arc and incandescent shafting (2b-1a) . . .	17.30	17.32	14.70	16.00
Friction of all shafting in dynamo building (2c-1a)	39.72 }	46.98 }	33.60	33.00
Same per tests (2c-1a-1b)	36.67 }	34.07 }		

Friction of all shafting:

Main's steam tests 46.98 H. P. and 34.07 H. P.

Main's wheel test 33.00

Error 13.98 H. P. 1.07 H. P.

The 13.98 H. P. error, or difference in results, is 42% of the 33 H. P. found by the wheel test.

Q. Mr. Whitham, have you made up a schedule showing the comparative value of water power and steam power based upon the amended offer and upon a theory of five or six days when the water is out of the canal? A. I have.

Q. Will you produce it?

Mr. MATTHEWS. We object, on the grounds stated this morning.

The CHAIRMAN. Mr. Brooks, how much would this schedule have differed from the one that he would have made—perhaps already has made—if you had not put in the amendment?

Mr. BROOKS. Do you mean in dollars?

The CHAIRMAN. No, in effect. As I understand, the witness this morning testified that there would be a saving of \$200 a year for coal. What other differences are there?

Mr. BROOKS. The other differences, of course, that they have the advantage of water at a certain rate during that time; and, of course, there would be a reduction in labor, a reduction in wear and tear upon the engine, and in various other ways that I desire to bring out.

The CHAIRMAN. As to those specific things, we think you can go into it, Mr. Brooks.

Mr. BROOKS. That is what I purpose to do by this tabulation. He would, perhaps, have to take some of the figures that he had in his original tabulation to give me the enhanced value of the water power.

The CHAIRMAN. Didn't he make a tabulation originally as to comparative cost of water and steam?

Mr. BROOKS. Yes, he did.

The CHAIRMAN. That is already in the record, isn't it?

Mr. BROOKS. Yes, certainly; that is, of course, upon a different basis.

The CHAIRMAN. But now you say that you have given them more, and therefore it is worth more.

Mr. BROOKS. Yes, sir.

The CHAIRMAN. Why don't you add that to the other?

Mr. BROOKS. That is just what we are doing. In order to make it plain, we have got to put some of the other figures, as I understand it, in this tabulation. I don't see that it makes any difference.

The CHAIRMAN. It is objected to, and I don't see why we cannot do it.

Mr. BROOKS. Why, may it please your Honors, it is just the same process that they have employed from the beginning

of their case. Take Mr. Chase, with all his various tabulations, and the others,—just the same process; and should we not be allowed to employ it? It is legitimate rebuttal.

The CHAIRMAN. Let us see how this thing stands. This witness has already stated the comparative valuation of water and steam; that is your direct evidence.

Mr. BROOKS. That is on one theory.

The CHAIRMAN. Well, I know.

Mr. BROOKS. Yes, sir.

The CHAIRMAN. Now you ask him, taking into account the facts that arise in the amendment, what additional saving there will be.

Mr. BROOKS. Yes, sir, but it saves all along the line.

The CHAIRMAN. Let him state all along the line, then.

Mr. BROOKS. Cannot I go into the details of it?

The CHAIRMAN. I do not think so, no. Yes, you can, certainly, so far —

Mr. BROOKS. I do not know why.

The CHAIRMAN. Well, I say, state your details so far as they go, all along the line, with reference to these new things, but not with reference to the old things; otherwise we should have to reopen the case.

Mr. MATTHEWS. Possibly, if you showed us a copy, Mr. Brooks, it might facilitate the argument.

Mr. BROOKS. I will waive that for just a moment.

The CHAIRMAN. Yes?

Q. Mr. Whitham, have you prepared a table showing the estimates on the cost of operating the power plant of the electric station by water power with steam auxiliary as compared with steam power alone, using the present plants unchanged, the average load being 200 horse power, variable, paying \$72,000 bonus and \$1,500 yearly rental per mill power for each of eight mill powers? A. Yes, sir.

Q. Will you produce that? I will waive the other for a moment. A. You have the only copy I have besides the —

The CHAIRMAN. What does that contradict?

Mr. BROOKS. It is a table of comparisons, same as I put in this morning; that is, on the same theory.

Mr. MATTHEWS. This is nothing new; this is a table of comparison from the other.

Mr. BROOKS. I so understand it.

Mr. GOULDING. It contradicts all their experts, Main and the others.

The CHAIRMAN. That may be. I don't know anything about it.

Mr. GOULDING. That is what we claim about it.

(Counsel for the City examined the table.)

The CHAIRMAN. If you have no special objection to that, Mr. Matthews, if it is a comparison taken from the tables, we should like it.

Mr. MATTHEWS. He has included a column of his own, and we do not know just what basis it is on.

Mr. BROOKS. I think perhaps I can tell you, Mr. Matthews.

Mr. MATTHEWS. Perhaps it would save time, if we could have this over night and let you know in the morning.

Mr. BROOKS. Very well. We have no objection. That is the only one we have.

(After conference between counsel and the Commissioners, the hearing was adjourned to Thursday, May 9, at 10 A.M.)

SEVENTY-SEVENTH HEARING.

BOSTON, Thursday, May 9, 1901.

The Commissioners met at the Court House at 10 A.M.

DISCUSSION ON MR. WHITHAM'S TABULATIONS.

The CHAIRMAN. Have you looked over those papers, Mr. Matthews?

Mr. MATTHEWS. Yes, sir.

The CHAIRMAN. What do you say about them?

Mr. MATTHEWS. We object to their introduction, on various grounds. They are not simply tabulations of parallel columns of figures which are to be found in the testimony as having been given by the other side. If they were such, we should probably not object. We have not done so when the other side offered some tabulated structural valuations. They went in subject to verification; and, in like manner, Mr. Bygrave, for the City, presented a tabulation or schedule of quantities as estimated by the different witnesses. That was admitted in like manner by consent. If these tables consisted simply in the placing in parallel columns of the figures which have been given by the various witnesses either for the City or for the Company, or for both, I do not know that we should object. We should be, perhaps, inclined to consider it a convenience, both for the Commissioners and for counsel on both sides. But these schedules are something entirely different, and present an entirely new question in this case. That is to say, they are different from any schedules offered by either side so far. They are tabulated computations, arranged in parallel columns, of figures computed by this witness, as he alleges,— and we assume, for the purpose of this discussion, with fairness and accuracy,— from the testimony of the witnesses on both sides in this case. The figures themselves are not the figures that are used by the

witnesses, but are his computations from them. The tables are substantially arguments in tabular form. They consist mainly of figures which are computations from figures found in the testimony, including, I apprehend, some figures which are themselves found. For the most part they are computed figures. Then the tables apply these computed figures so as to work out certain results upon a process which is the witness's own process, and not that adopted by the witnesses for the City. That is, the figures themselves are not those of preceding witnesses, but are mainly the computations of this witness, and the conclusions are exclusively this witness's own.

It might be said that they were also, as we contend, inaccurate and misleading, both as to the figures themselves that are set down in the tables and as to the use made of them and the conclusions drawn from them by this witness; but that, perhaps, is apart from the question that I am now arguing.

The method of treating these figures, as well as the figures themselves, is this witness's own, and not the method of the witnesses that have preceded him.

In short, these tables, one and all, are nothing but an attempt by a witness in rebuttal, after the testimony in chief for both parties has been closed, to sum up all the evidence in the case, both pro and con, upon the question of water power, or upon one of the issues growing out of the water power question as it is presented in this case. It is an attempt to sum up the evidence, to epitomize, summarize, and tabulate all the evidence that has been given in the case upon an important branch of it by a witness in rebuttal, and I think that that is an unheard of thing. I never knew of any similar effort having been made. It has not been attempted in this case, except possibly by Mr. Main in two instances that I will refer to in a moment, in both of which his efforts were excluded by the Court.

The general objection, as matter of law, to this line of testimony is that it is argumentative, that it is forestalling the work of counsel, that each side has as a matter of right only one opportunity to argue its case, and that by counsel chosen at the close of the testimony, and that that argument should not be

preceded by interlocutory arguments made by expert witnesses, summing up, reviewing, epitomizing, and tabulating the testimony that has preceded him. That, it seems to me, is the function of counsel and of counsel alone. This objection, we conceive, is fundamental and impossible to overcome, apart from the other and practical objection that, if these tables, or any of them, are admitted, it will make it necessary for us to do with these tables what we did with the tables that were properly introduced by the Company through Mr. Prichard and Mr. Nettleton during its evidence in chief, and ask our witnesses to reform the tables of Mr. Whitham as we think they should be reformed.

It will be seen that these tables do not meet any tables that we have put in. They are tables prepared from the oral evidence in this case. They are tables prepared in a new form, and they comprise new figures and new theories. The proper use of tables in a case like this we conceive to be as follows, as illustrated by the procedure that has been adopted in this case. The Company, for instance, was permitted to introduce certain tables prepared by Mr. Prichard and Mr. Nettleton. They came out in cross examination, I believe, but as part of the data that the witnesses had used, and therefore whether they were brought out in direct or cross examination is immaterial. Then we put on Mr. Chase to meet those tables, those very tables, by reconstructing them as we thought they should have been constructed originally, using the same data that Mr. Prichard and Mr. Nettleton had access to. Then in rebuttal the Company produced a witness, Mr. Foster, who took Mr. Chase's work and reconstructed it, using the same data that Mr. Chase had access to in the manner which he, Mr. Foster, thought the tables should have been constructed originally by Mr. Chase. That, we think, is the proper way to use tabulated evidence, and is the extent to which it should go. Here, however, is an attempt to review all the evidence in the case, all the oral evidence when figures are given, the schedules, the tables, and so forth, by means of a new table constructed by the witness himself, revising, epitomizing, summarizing, and condensing all the evidence that has gone before, both for the Company and

the City, upon the value of water power. And, if it is admitted, it must be open to us to reconstruct these new tables by our witnesses upon the proper theory, using the same data that this witness has used.

It seems to us that such a course would prolong these hearings indefinitely and unnecessarily, and that that is a sufficient reason for their exclusion. Apart from that, there is the objection that I first mentioned, which seems to us fundamental, that this is an attempt of a hitherto unheard of character, at least so far as the practice in this case goes, to argue from the evidence of other witnesses by means of the testimony of a witness put on in rebuttal. That, we think, there is no precedent for.

Now this question came up once before, as I said, incidentally. No attempt has been made by either side so far to produce any schedules of this character, except that Mr. Main did prepare two schedules, both of which were excluded by the Commission, in criticism of Mr. Robb's testimony about the cost of water power in Hartford as applied to Holyoke and in criticism of Mr. Anderson's testimony concerning the cost of water power in Springfield as applied to Holyoke. Those two tables prepared by Mr. Main, contained in his original schedules, were submitted to the Commission, objected to and excluded, and are not in evidence; and Mr. Main was compelled by the Commission to state his views orally in the ordinary way, by question and answer. This question, or a similar one, may be said to have been already passed upon in this case. As my associate has in mind the citations in the evidence, I think he could refresh the recollection of the Court more rapidly than I could.

Mr. GREEN. Your Honors have before you the evidence.

The CHAIRMAN. All right.

Mr. GREEN. And some things —

The CHAIRMAN. Well, give me the pages.

Mr. GREEN. Pages 126 and 127, also 131.

The CHAIRMAN. Yes, I looked those over.

Mr. GREEN. Again at 132; again at 140, 141, 142. The

first four pages refer to the offer that we made and the last three to the rulings the Commission made. I should like to refer the Commission also to page 124.

Mr. GOULDING. Will you kindly give me that volume?

Mr. GREEN. It is not a volume; these are the proof sheets.

The CHAIRMAN. Vol. XI.

Mr. GREEN. It will be Vol. XI. when it is bound up; on page 124 will be found a statement of the petitioner's position made by Mr. Goulding as illustrating the view his side took as to an argumentative schedule. The principle, it seems to us, which underlies our offer and their offer is the same, although the actual questions could be differentiated. We claimed that Mr. Anderson, Mr. Robb, Mr. Prichard, and others, made certain statements as to the cost of power, and we offered schedules showing on the basis of our theory how the cost of that power should be computed. Those were excluded. We were allowed to criticise their figures. We were allowed to tell how that ought to be computed for the purpose of criticising it, but we were not allowed to submit a schedule; and in that we acquiesced, and put in such evidence as we could, leaving the matter later to be figured out, and put in schedule form, if worth while, at the argument. Your Honors can see by inspection that this schedule which is offered contains conclusions drawn from their standpoint, as well as statements which we say are incorrect. Besides that, there is this question. The first column in the schedule has the question we discussed yesterday, and which was dropped temporarily when this schedule was offered. It is contained, however, in this particular schedule that your Honors have to deal with. Also, it contains the entire cost of —

The CHAIRMAN. All right.

Mr. GREEN. — The power under what they call the terms of the new offer, without stating any assumptions.

Mr. BROOKS. Of course, may it please your Honors, when the general statement is made that schedules are argumentative, of course it is necessarily true; there is no schedule that has been introduced in this case that is not more or less of an ar-

gument in figures. When my friends say that this same question was passed upon in reference to the schedules of Mr. Main, I say that that is a mistake made by them, that that is not so. What your Honor did pass on was his argument upon the construction of the lease; and your Honors will remember that there were pages of writing, not figures, typewriting, in which he discussed the construction of that lease. Now they have gone in their case upon a certain theory, and that theory is that, with an average load of 230 horse power, they are to pay for 16, the price of 16 mill power; that is, the \$72,000, and the rental of each of those 16 mill power at \$1,500, was upon the theory of 8 mill powers at the same rental and with the same bonus. And they say, therefore, that the power that they use, 230 horse power, costs them, as Mr. Main testified, the same as the 16 mill powers. Well, we have a right to criticise that; that is a theory introduced by them into this case. Perhaps I have got the — instead of 230, it is 200 horse power.

Now, in connection with that criticism of their theory, we say that we have got a right, as a part of our answer, to put in just what the cost of the power is under this new offer, what it is worth, what its fair market value is; and it is not any attempt to make any closing argument, and I think my friend is wrong when he intimates that his side will only have one opportunity to make a closing argument. It strikes us that his side has had several opportunities, which they have utilized at the present time, which they utilized and very efficiently. Now we say it is absolutely necessary to a fair understanding of this matter that this particular schedule be introduced in evidence. It is just as competent as any schedule that has been offered, and we say it is absolutely essential to our development of the case that this should be introduced.

Mr. GOULDING. I had not intended to address the Court on this question at all, and propose to do so in the very briefest and most general way. I stand by my proposition, made in connection with Mr. Main's schedules, that it isn't competent for an expert to take the evidence of another expert, and argue in fortification of his own views merely. It is a matter of

argument to do this that counsel might very well do. The objection to Mr. Main's schedule, which occasioned a postponement of the case, was, however, not to the tables, as my learned associate has suggested. We did not address — I think the records will show — any objection to their tables as such.

Mr. GREEN. I referred, Brother Goulding, in what I said in argument to the schedules prepared to meet the testimony of Professor Robb, Mr. Anderson, and Mr. Prichard's 25 per cent. statement, and did not refer to the original conclusion.

Mr. GOULDING. I haven't very clearly in my mind what precise tables counsel now refers to, but I remember my argument as having reference to the written arguments of Mr. Main, which were more or less cogent, and which went on to include the construction of leases, and deductions which were more or less forcible from premises which were more or less sound. That we objected to. Now it seems to me that this has been a case which might be described as peculiarly a battle of the schedules. It is a warfare of the books, so to speak. And if the schedules which Mr. Main has prepared and the arguments that he has addressed, from the figures, to the Court, are met in some measure or to any extent by this schedule, in this table which Mr. Whitham has prepared, it ought to be admitted. And I understand that is what its aim is,—in part, to answer the suggestions as to what would be the result of paying this rent for certain mill powers, which have been adduced here and put in evidence by tables, and through Mr. Main and through Mr. — the other gentleman —

Mr. MATTHEWS. Mr. Manning.

Mr. GOULDING. Mr. Manning, and others, who have been called by the defendant. And in part, also, to show the cost of running this power by water — by water and steam, the present plant — as compared with running it by steam alone. I don't know but it is true that all this evidence could be properly summed up in a closing argument, that the relations of the figures shown on the tables are sufficiently evidence so that they could be dealt with by counsel in closing argument ; but I do not understand that to be the fact. I understand that the relations

between the figures have got to be explained, explained on mathematical principles, and deduced in the form of proper mathematical reasons, and that they afford a direct answer to the position taken by Mr. Main, Mr. Manning, and the other experts. I have not deeply and elaborately studied this schedule, but I submit that it is within the principle on which the schedules have been admitted, and it is a proper answer in rebuttal to Mr. Main, and that it stands also, safely and securely, on the foundation that we have, since the defendant's case was opened and at their request, modified the proposition that we have made.

Mr. MATTHEWS. Just a word in reply.

The CHAIRMAN. The only question we will now pass upon is the admissibility of the schedule as a schedule. When objection has been made, we have excluded them. We don't think they are competent, and they can only be admitted by the sanction and agreement of the parties. This paper is therefore excluded.

Mr. BROOKS. It will necessitate a few moments, may it please your Honor.

The CHAIRMAN. Yes, we understand that.

Mr. BROOKS. And it will take probably several days to put in this schedule by question and answer. Now, may it please your Honors, in view of this rather unexpected decision that all schedules objected to shall be excluded, it will necessitate our taking some little time to formulate a brief or a series of questions upon this table, and, of course, it will extend the hearing, it is unnecessary to say, very materially.

The CHAIRMAN. I am going now through a quantity of evidence, something like a hundred pages or more, of Mr. Main's testimony, where a question not exactly like this was raised, but where, inasmuch as the schedules were put one side, it required a very long oral examination.

Mr. BROOKS. Yes, sir.

The CHAIRMAN. And, I must confess, a very unsatisfactory one, because we covered a great deal of space—I am sorry to say I participated altogether more than anybody else—without getting many answers and without getting much

evidence. Of course, I am sorry, for one of the Commissioners, to have to adopt a rule of this kind ; but it is impossible for us to say in advance, in that table, even if that objection should be waived,—technical objection, you might call it,—to determine what is rebuttal evidence and what is not. We intimated to you yesterday, Mr. Brooks, that we should not, as we thought, allow you to re-examine your witnesses as to the valuation of the steam plant or water plant as it was upon your original offer.

Mr. BROOKS. Yes, sir.

The CHAIRMAN. But that, you having made an amendment, we would allow you, of course, to go forward and show what the additional valuation, on account of that amendment, was ; and the other side may meet that, if they wish.

Mr. BROOKS. Yes, sir. That is what we seek to do in one column of this tabulation.

The CHAIRMAN. Can't you examine him from the table?

Mr. BROOKS. I presume it would save time, if I had a little farther time. The other columns are the taking of Mr. Main's figures, as I am informed, and of the figures of Mr. Manning, Mr. Warner, and Mr. Blood, and, by a system of the witness's own, criticising those figures. You see we raise the same question, really, that is raised here, as I recall it, with reference to the many tabulations of Mr. Chase, which were taken from the Gas Commissioners' reports almost entirely.

The CHAIRMAN. Let me interrupt you, Mr. Brooks. How long a time would you like?

Mr. BROOKS. I should think it would take half a day.

Mr. MATTHEWS. What, to prepare? I am just asking for information, Mr. Brooks. Do you mean to prepare?

Mr. BROOKS. That is my opinion, because we understand, if this ruling applies to this schedule, it applies to some others.

The CHAIRMAN. Probably it does.

Mr. BROOKS. And I must say that I am surprised that our friends should take the attitude of objecting to the schedule as a schedule—I did not so understand them—if it was competent to put in testimony, I did not understand them to object to having it in a tabular form. But, if they do, the —

Mr. MATTHEWS. We did not object to their putting in the details of valuations in the original case by means of schedules; but I should not think of attempting in any case—I never saw yet an attempt in the trial of any case, however complicated—to sum up preceding evidence by a witness in rebuttal, and we intend to raise every technical objection that we can. It may doubtless inconvenience my brother in putting this evidence in, and we should not be disposed to object to any reasonable adjournment to permit him to formulate in his own mind the questions that he wishes to ask this witness. But, so far as the effect of the ruling of the Commission upon the length of this case, we believe that it will tend materially to shorten these hearings, because it will now not be necessary for us to have all our witnesses construct counter tables to meet these.

Mr. BROOKS. I think I shall be borne out in my opinion that it will lengthen it, but it has nothing to do with the question.

The CHAIRMAN. You want some time to prepare?

Mr. BROOKS. Yes. I want to say in reply to Mr. Matthews, if I may be permitted, that Mr. Main in his various schedules took the figures of our experts. We say that he has misapplied the figures—

The CHAIRMAN. We certainly excluded practically all of Mr. Main.

Mr. BROOKS. No, you excluded none of his tables.

Mr. MATTHEWS. Oh, you excluded several of them.

The CHAIRMAN. We see no objection, Mr. Brooks, to your having time for preparation, if this ruling is a surprise to you.

Mr. MATTHEWS. Can you go on with any other witness now?

Mr. BROOKS. No, I cannot. What applies to Mr. Whitham applies to every other.

Mr. COTTER. So far as Mr. Main's schedule was concerned, the part of it we understood to be argumentative we excluded.

Mr. GOULDING. That was the written portion of his schedules.

Mr. MATTHEWS. There were four distinct schedules of Mr. Main excluded in their entirety,— 18, 19, 20, and 21,— regardless of whether they were argumentative or not.

The CHAIRMAN. Yes. Mr. Brooks, how long a time would you like?

Mr. BROOKS. We could dispose of this schedule, I presume, by one o'clock; but there are several of the schedules, and it will take certainly all day and to-night, I guess, to get them ready.

Mr. MATTHEWS. Would anything be gained by adjourning till to-morrow morning?

Mr. BROOKS. I should think so.

The CHAIRMAN. If Mr. Brooks desires the time, the Commission will not stand in the way.

Mr. BROOKS. I think it is absolutely necessary.

The CHAIRMAN. I think it will be better, Mr. Brooks, if you will take until to-morrow morning, then.

Mr. MATTHEWS. We had the same privilege when Mr. Main's schedules were thrown out. I think Mr. Brooks ought to have it now.

The CHAIRMAN. All right. Then you will come in to-morrow morning at ten o'clock.

(Adjourned to Friday, May 10, 1901, at 10 A.M.)

SEVENTY-EIGHTH HEARING.

BOSTON, Friday, May 10, 1901.

The Commission met at the Court House at 10 A.M.

JAY M. WHITHAM, *recalled*.

Direct examination by Mr. BROOKS, resumed.

Q. Mr. Whitham, assuming that there are only six days in the year, upon an average, when the water is out of the first level canal during the time of operation of the electric light, and that the average load upon the station is 200 horse power, — have you made a calculation as to the value of 8 mill powers to carry this load upon a basis of paying for 16 mill powers a bonus of \$72,000? A. Yes, sir.

Q. What is the value?

Mr. MATTHEWS. Wait one moment. I object, on the ground that I understood the Commissioners to rule the other day that the witness could state the increased value due to the change in the Company's position, but could not revalue the whole thing.

The CHAIRMAN. That is the rule we laid down, Mr. Brooks.

Mr. BROOKS. I did not so understand it.

The CHAIRMAN. Yes.

Mr. BROOKS. But what difference does it make, if we give the value? It is a mere matter of computation.

The CHAIRMAN. Yes, and there is no special objection to this question, but we have already gone into this question.

Mr. BROOKS. Then, Mr. Whitham, take this piece of paper and make the computation. I will change my question.

Q. What is the increase in the value, if any? A. I suppose by that question you mean over my previous estimate?

Q. Yes. A. And when I gave my previous estimate

there were certain comparisons made between steam and water in which certain elements were not considered, such as fixed charges, which I assumed as being common to both plants and holding, whether the plant was run by steam or water power; and therefore my original estimates as given in Vol. IV. do not contain all the items.

The CHAIRMAN. Put those in, then.

The WITNESS. It would take a good deal of time, your Honor. It would be the recasting of all those other estimates.

Mr. MATTHEWS. That is going to take so much time, I would rather waive the objection and let the witness answer your first question.

Mr. BROOKS. He answered the first one.

Q. What is the value? A. The rental of \$1,518 per mill power per year.

Q. Now how did you obtain that? A. I obtained that by taking my structural values, actual, as of January, 1898, or, for the hydraulic plant, \$89,449; steam plant, \$50,071; and mill site and privilege, \$72,000. With that as a basis, I ascertained the annual operating cost —

Mr. MATTHEWS. Excuse me, are you reading from a paper?

A. (Yes, sir, from my notes.) For the combined plants to be as follows:—

Water rentals, 8 mill power	\$12,000.00
Feed water	15.00
Coal at \$4.05 a ton	200.00
The removal of the ashes	1.00
Oil and supplies for the combined plant	69.00
Labor on the water plant	50.00
Labor on the steam auxiliary	80.00
Repairs and depreciation on the steam auxiliary	500.00
Repairs and depreciation on the hydraulic plant	224.00
Insurances	250.00
Interest and taxes on the hydraulic and steam plants	7,325.00
Interest on the mill site	2,880.00
Total annual cost for the combined plants.	\$23,594.00

This I compared with the total annual costs of operating the present plant with the present load, with the present machinery unchanged —

Q. By steam? A. By steam alone, and ascertained the cost to be as follows: —

Feed water	\$358.00
Coal, at \$4.05 a ton	10,814.00
The removal of the ashes	56.00
Oils and supplies	730.00
Labor	4,160.00
Repairs and depreciation	3,505.00
Insurances	250.00
Interest on the steam plant	2,629.00

Q. Excuse me a minute. Do you include taxes in there?

A. Yes, sir, interest and taxes on the steam plant, \$2,629; interest on land, \$1,239; making a total annual cost, when operating by steam power alone, of \$23,741 each power, which, compared with the total annual cost of operating the combined plants, shows an annual saving, by the use of water power, of \$147 a year, which results in an annual rental, possible annual rentals, of \$1,518 per mill power per year for 8 mill power after paying \$72,000 bonus on 16 mill power. And that would be equivalent to paying for 8 mill power at \$1,500 rental each, and the bonus of \$75,675, instead of \$72,000.

By the CHAIRMAN.

Q. That is, you are now figuring under the amended offer?

A. Yes, sir.

The CHAIRMAN. I understand.

By Mr. BROOKS.

Q. I want to ask you here, where did you obtain, for instance, your figure of \$69 for oil and supplies for both plants?

A. I ascertained that from Mr. Winchester's testimony given on April 1, 1901, in which he stated —

The CHAIRMAN. What he said you need not state.

The WITNESS. Very well, sir.

Q. You obtained that from Mr. Winchester's testimony?

A. Yes, sir.

Q. I notice you put in repairs and depreciation on the hydraulic plant at \$224 per annum? A. Yes, sir.

Q. On what basis was that obtained? A. That is a

quarter of 1 per cent. I have allowed there about nine times the actual annual repairs for the last ten years.

Q. Now assume the number of days of rebate that Mr. Main assumed, and that steam was actually used in the operation of this plant for 28 days in the year, as he assumed, then what would be his showing of the value of 8 mill powers of water at the present load of 200 horse power average, if they paid a bonus of \$72,000, according to the schedule and testimony that he has already given in the case?

Mr. MATTHEWS. I do not see how the witness can say what Mr. Main's showing would be. He can submit a calculation of his own proposition, if that is competent.

Mr. BROOKS. I submit my question is a proper one.

Mr. MATTHEWS. What would be another witness's showing?

Mr. BROOKS. Yes, taking his own figures based upon the use of steam for 28 days.

The CHAIRMAN. I think, Mr. Brooks, that you ought to call his attention to his own method of treating the same condition. You objected yourself in Mr. Main's testimony, and on account of that we ruled out three or four questions which I looked at carefully yesterday.

Mr. BROOKS. I know that was stated yesterday.

The CHAIRMAN. You can call the witness's attention—

Mr. BROOKS. They have done it, may it please your Honor, again and again.

The CHAIRMAN. I have no doubt that they have done it over and over again.

Mr. BROOKS. Why should the line of limitation be drawn on us?

The CHAIRMAN. I say I have no doubt they have; I do not know whether they have or not.

Mr. BROOKS. I can cite instances, if your Honor wishes.

The CHAIRMAN. You may. Mr. Cotter and myself think you ought to put it upon the witness's own proposition, taking the same condition.

Mr. BROOKS. Then I purpose to put this question:—

Q. Taking Mr. Main's figures of the operating expenses for the number of days that he assumed for rebate, and the number of days that he in his calculations assumed that steam was actually used in the operation of this plant,—according to the schedules and the testimony of Mr. Main, what would be the result as showing the rental value of 8 mill powers of water for this same load of 200 horse power, if a bonus of \$72,000 were paid? A. \$875.42 per mill power per year for each of the 8 mill power.

Q. Now how do you obtain that result from the evidence and the schedules of Mr. Main? A. By taking Mr. Main's valuations, new, structurally, as of January, 1898, as he did,—namely: hydraulic plant, \$69,850; steam plant, \$43,060; mill site and privilege, \$72,000,—and then ascertaining the annual cost of operating the combined plant as per Mr. Main's testimony and schedules to be as follows: 8 mill powers of water, with 23 days rebate—

The CHAIRMAN. 23 or 28?

Mr. BROOKS. 23 days rebate, but 28 days actually using steam.

The WITNESS. There were 23 days of rebate; but Mr. Main said the plant would run by steam 28 days,—the other days not being rebate days,—which would give:—

Water rental, 8 M.P.	\$11,080.00
Coal, at \$4.05 per ton	797.85
Removal of ashes	4.00
Oils and supplies for the combined plant	300.00
Labor on the water plant	159.51
Labor on the steam auxiliary	280.00
Repairs and depreciation on the steam plant	861.20
Repairs and depreciation on the hydraulic plant	698.50
Insurances	132.50
Interest and taxes on the hydraulic and steam plants	6,774.60
Interest—	

Mr. MATTHEWS. Pardon me, are you reading from a paper?

The WITNESS. I am.

Interest on the mill site and privilege	\$3,600.00
Total annual cost when operating the combined plants, the steam plant being operated 28 days	\$24,688.16

The annual cost when operating by steam power alone Mr. Main found to be:—

Coal, at \$4.05 per ton	\$10,084.50
Removal of ashes	43.50
Oils and supplies	600.00
Labor	3,650.00
Repairs and depreciation	1,722.40
Insurances	132.50
Interest and taxes on the steam plant	2,583.60
Interest on land	875.00
Total annual cost by steam power alone	\$19,691.50

which, compared with the annual operating costs of the combined plants, shows per Mr. Main a saving per year in favor of the use of steam power of \$4,996.66, which is equivalent to paying the bonus of \$72,000 for the 16 mill power and an annual rental on each of 8 mill power of \$875.42.

By the CHAIRMAN.

Q. How much did Mr. Main make it, if I may ask? A. Every figure which I have named is in his schedule.

Q. And what was his result? A. His result I do not remember, but it differed from this, due to the fact that when comparing the present plant he charged \$24,000 rental wherever he charged for the full 16 mill powers. The only change I have made is to reduce the rental from \$24,000 for 16 mill power to \$12,000 for 8 mill powers.

Q. That is to say, that that ought to be \$875? A. According to Mr. Main's figures, on the supposition that the steam plant as an auxiliary operates 28 days in the year.

Mr. MATTHEWS. I think we ought to be permitted to state at this point that we do not contend that Mr. Main's calculation properly applied would eventuate in \$875, but at a totally different figure.

By Mr. BROOKS.

Q. Now you have examined the schedules and testimony of Mr. Manning? A. Yes, sir.

Q. And treated them in the same manner that you have stated that you treated Mr. Main's? A. I have.

Q. And with what result? A. That, paying a bonus of \$72,000 for the 16 mill powers, you can afford to pay an annual rental on each of the 8 mill powers of \$739.88, the auxiliary plant running 53 days in the year and there being a rebate on 25 days.

Q. Now will you give the details and method by which you arrive at that result? A. I have taken, as did Mr. Manning, the structural values, new, as found by him as of January, 1898, namely:—

Hydraulic plant	\$65,581.87
Steam plant	40,395.93
Mill site and privilege	72,000.00

He then ascertained the annual costs of operating the combined plants to be as follows:—

Water rental on 8 mill power, with 25 days rebate	\$11,000.00
Coal, at \$4 per ton, the steam plant running 53 days	1,488.00
Oils and supplies for the combined plants	498.00
Labor on the water plant	164.00
Labor on the steam auxiliary	450.00
Repairs and depreciation on the steam auxiliary	1,413.85
Repairs and depreciation on the hydraulic plant	1,967.45
Heating of buildings, 73 tons of coal	292.00
Insurances	201.98
Interest and taxes on hydraulic and steam plants	5,298.89
Interest on mill site and privilege	2,880.00

Total annual cost of operating the combined plants, the steam auxiliary running for 53 days—

Q. According to Manning? A. According to Mr. Manning, and rebating for 25 days on 8 mill powers, amounts to \$25,654.17. The costs of operating by steam power alone Mr. Manning made to be as follows:—

By Mr. MATTHEWS.

Q. When you say the cost of operating by steam power, you mean the cost of operating this particular plant by steam power, don't you? A. I do.

Q. And the same would hold with your analysis of Mr. Main's data? A. Yes, sir.

Q. You do not mean, by using the expression "cost of steam power," the cost of producing power by steam generally,

but simply at this particular plant? A. At this particular plant, with the plant unchanged.

Coal, at \$4 per ton	\$9,944.00*
Oils and supplies	550.00
Labor	3,650.00
Repairs and depreciation	2,019.80
Insurances	201.98
Interest and taxes on steam plant	2,019.80
By an error in fixed charges, Mr. Manning in his schedule charging 11½ per cent. instead of 10½ per cent., although his percentages add up to only 10½ per cent., it makes a difference, to make up his charge to what he actually charged, of	403.85
Interest on land	784.00
Total annual operating cost by the present plant for steam alone	\$19,573.43

Comparing this with the total annual cost of operating the combined plants, the steam auxiliary operating 53 days and the 8 mill powers rental being rebated for 25 days, shows an annual saving by the use of steam power of \$6,080.74, which is equivalent to paying an annual rental of \$739.88 per mill power for each of 8 mill powers, after paying a bonus of \$72,000 on 16 mill powers.

Mr. MATTHEWS. Now, if your Honors please, we desire to raise another objection to the questions which have been asked this witness and to the answers which he has given to them, an objection which was not apparent when the questions themselves were put. It appears that this witness has used the data which Mr. Main and Mr. Manning used for figuring out their values of water power in this case; he has used simply the data which those two witnesses took for meeting a subsidiary or side calculation made by the witnesses on the other side, relating to the comparative cost of getting a certain amount of power by water power or by steam power at this particular plant; and none of the data which this witness has extracted from the testimony of Mr. Main and Mr. Manning were used by them for the purpose of or as data for determining their opinions of value. For instance, Mr. Main's final figures were that the fair market value of this water power and privilege was measured water and \$50,000 for the site. Mr. Manning's valuation was \$600 a mill power and the value of

the land as land ; and the data which have been quoted by this witness were not used by either of these witnesses in forming those opinions of value. They were used for a different, collateral, and subsidiary purpose.

The CHAIRMAN. Mr. Matthews, do you think it would be possible for us at this time to study that question up ? We will admit this evidence, and, if it turns out that it is not competent testimony, why, we shall have to exclude it so far as it is admitted. We are unable to formulate any reason up to the present time why it should not remain ; but if, on examination of the schedules, this should have been put in originally —

Mr. MATTHEWS. That is not my objection now.

The CHAIRMAN. I understand. I withdraw that statement, but we will admit the testimony.

Mr. MATTHEWS. I do not desire to except, but I think it my duty to call attention at this time to the fact that the witness is not using the data which Main and Manning used.

The CHAIRMAN. In such a case as this we must depend on the good faith of the counsel.

Mr. MATTHEWS. Undoubtedly he has some theory by which he thinks these are competent.

Mr. BROOKS. By my silence I do not want it to be inferred that I assent to the assumptions of my brother on the other side. We hold entirely to the contrary.

By Mr. BROOKS.

Q. Mr. Whitham, did you take from the schedules and the evidence of Mr. Warner his various calculations, and treat them in the same way that you have treated the calculations of the two witnesses, Messrs. Main and Manning ? A. I did.

Q. And what did you obtain as a result ? A. Will you let me see that paper ?

Q. This big one ? A. Yes, sir. (Paper handed to witness.) After paying a bonus of \$72,000 for 16 mill power, the rental value of each of 8 mill power —

Q. According to Mr. Warner ? A. According to Mr. Warner, under the present load condition, there being a rebate for 45½ days on each of the 8 mill power, and the steam auxiliary

plant operating for $\frac{1}{4}$ of the year, amounts to a rental value of \$243 per mill power less than nothing.

Q. How did you obtain that result?

The CHAIRMAN. Mr. Brooks, inasmuch as Mr. Warner's details are in evidence already, do you need it now?

Mr. BROOKS. We do, may it please your Honor, for further suggestions that we have to make. It is quite important to us, we think.

The CHAIRMAN. All right, go ahead.

Mr. MATTHEWS. We would like to re-enforce Mr. Brooks's suggestion, because we contend that none of these data are in the case. They are computations by this witness. They are not data used by Messrs. Main, Manning, and Warner. They are computations by Mr. Whitham, on some theory of his own, which we will inquire into on cross examination. So we would like to have them also.

Mr. BROOKS. We do not agree to that statement, either.

The WITNESS. This result was obtained from the testimony and evidence of Mr. Warner, in which he found that the structural values, new, of the plant as of January, 1898, were: hydraulic plant, \$69,501; steam plant, \$44,516. The annual costs of operating the combined plants he found to be:—

For water rental on 8 mill powers, restricted 45 $\frac{1}{2}$ days	\$10,180.00
Coal, at \$3.75 a ton, for the auxiliary plant, running $\frac{1}{4}$ of the year	2,201.00
Oils and supplies for the combined plants	620.00
Labor on the steam auxiliary	2,876.00
Repairs and depreciation on the steam auxiliary	3,227.00
Repairs and depreciations on the hydraulic plant	\$2,346.00
Insurances	188.00
Interest and taxes on hydraulic and steam plants	10,832.00
Interest on mill site and privilege	5,760.00
Total annual operating cost for the combined plants under these conditions	\$38,310.00
The total annual operating costs by steam alone of the present plant, at the present load —	

Q. According to Mr. Warner? A. According to Mr. Warner, are as follows:—

Feed water	\$468.00
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Mr. MATTHEWS. Excuse me one moment. Are these quotations from the evidence within the ruling of the Commission?

The CHAIRMAN. I do not know whether they are competent or not. We will let them in. It is a restatement of the testimony, so far as I can see.

Mr. MATTHEWS. We contend it is not a restatement, but a perversion.

The CHAIRMAN. That may be so; I cannot follow that line—

Mr. MATTHEWS. Take the case of Mr. Main. I do not remember myself about Mr. Warner, but I remember distinctly about Mr. Main, that he did not use the data taken by Mr. Whitham for this purpose at all, but for an entirely collateral purpose.

Mr. GOULDING. What collateral purpose had Mr. Main to serve in this hearing except to value this property? What was he talking about except that?

Mr. MATTHEWS. I will tell you. At one stage of Mr. Main's examination—and this also applies to Mr. Manning—he was asked to make a calculation, which hadn't anything to do with his valuation at all, between the cost of running this plant by water power and running this particular plant by this particular steam plant. The purpose of that was entirely collateral, simply to meet similar calculations which had been made by Mr. Robb, Mr. Whitham, and others for the Company. That calculation and the data in it were not used by Mr. Main in forming his opinion of the value of water power in this case, not at all. The same is true of Mr. Manning. I do not remember about Mr. Warner. The point I was raising just now was simply whether the witness's quotations from the evidence were within the ruling of the Commission.

Mr. BROOKS. You did it continually.

Mr. MATTHEWS. I do not think we attempted to quote evidence.

Mr. BROOKS. You did it through your witnesses' making certain assumptions.

Mr. MATTHEWS. I do not care to argue it. I just raise the point.

The CHAIRMAN. Go forward. We will examine the evidence later; we cannot now.

Mr. GREEN. We would ask Mr. Brooks, in cases where the witness has made computations from the evidence of our witnesses, to distinguish them from the places where he has quoted it.

Mr. BROOKS. You can ask anything you please. I am going to pursue this line of inquiry, if I am allowed to.

The WITNESS. Annual cost by steam alone, feed water—

Q. Now there has been an interruption here. That is by Mr. Warner? A. Yes, sir.

Feed water	\$468.00
Coal, at \$3.75 per ton	8,798.00
Oils and supplies	620.00
Labor	4,732.00
Repairs and depreciation	3,851.00
Insurances	188.00
Interest and taxes on the steam plant	4,229.00
Interest on land	1,477.00
Total annual costs by steam power alone	<u>\$24,363.00</u>

If this annual cost is compared with the annual cost of operating the combined plants, the difference is \$13,947 in favor of the use of steam power, which would be equivalent to a rental of \$243 less than nothing for each of the 8 mill powers, after paying a bonus of \$72,000, and considering further that there is a rebate for each of the 8 mill powers for 45½ days, and that the steam auxiliary plant operates ½ of the year.

Q. And this calculation of Mr. Warner's was based upon a load of 200 horse power, variable, at this station? A. Yes, sir, 200 horse power for all the working hours of the station, all the hours of the year except the 12 hours off each Sunday, or a net of 339 days of 24 hours each.

Q. Did Mr. Blood and Dr. Bell estimate the annual cost of the combined plants at the present station? A. No, sir.

Q. That is, for the present average load or any other load? A. No, I don't understand they did.

(At the request of Mr. Matthews, the stenographer read the preceding question, "Did Mr. Blood and Dr. Bell estimate the annual cost of the combined plants at the present station?")

Mr. MATTHEWS. I object to the question.

The CHAIRMAN. I do not think he is competent to pass upon it.

Mr. BROOKS. I purpose with my next calculation, if I am permitted, inasmuch as they did not make the calculation for the combined plants, to put in Mr. Main's calculation for the combined plants and Mr. Blood's and Dr. Bell's calculations for the steam plant alone.

The CHAIRMAN. If there is any difficulty, you can assume yourself in your question that they did not.

Mr. BROOKS. It seems to me it is a fact.

The CHAIRMAN. This witness cannot pass upon the effect of testimony given by another witness. It is for us to do that. You can assume it in your question.

Mr. BROOKS. I agree to that, may it please your Honor, but the very same thing was done with Mr. Chase again and again under our objection. Now I do not dispute for a moment but what your Honor is entirely right in your ruling at the present time, only I would like to have the same liberty extended to us.

The CHAIRMAN. How simple it is for you to say to this witness, "Assume." We will take your assumption and your statement. You are counsel in the case. If we have done anything in this case by which we have allowed witnesses to pass upon the effect of evidence,—excepting it must be done pretty generally with reference to figures,—why, we have made a mistake, that is all.

Mr. MATTHEWS. We do not understand that Mr. Chase was permitted to testify to anything of the sort; but we have a distinct recollection, as to Dr. Bell, that he offered average values from the witnesses from the other side, and that they were excluded.

Q. Assuming that Dr. Bell and Mr. Blood made no estimate of the annual cost of the combined plants at the present station, for the present average or any other load, have you made an examination of their figures, their testimony, and their schedules of cost for the operation of the plant by steam?
A. I have.

Q. And whether or not you have taken their testimony and their schedules with reference to the steam plant, and Mr.

Main's schedules and testimony with reference to the combined plants, and have found a result? A. I have.

Q. What?

Mr. MATTHEWS. I object.

The CHAIRMAN. On what ground?

Mr. MATTHEWS. On the ground that he is now jumbling up the testimony of two witnesses.

The CHAIRMAN. Very well. Take your own testimony. Mr. Main and Mr. Bell and Mr. Manning constantly referred to the testimony taken by the other parties, already put in by the petitioner, referred to the page, quoted from them, using their figures, the precise thing. I do not see why this witness cannot do the same thing.

Q. Well, give me an answer. A. After paying a bonus of \$72,000 for the 16 mill power, the result that would be reached in the case of Mr. Blood's testimony compared with Mr. Main's would be an annual rental of \$1,310 for each of the 8 mill powers, on the supposition that the water power was restricted 23 days of rebate and that the steam auxiliary operated 28 days. In the case of the testimony of Dr. Bell, when his costs are thus compared to Mr. Main —

Q. Are compared? A. Are thus taken into connection with the testimony of Mr. Main, the annual rental —

Q. That is, you mean the cost of the operation of the combined plant? A. Yes, I mean this: that, taking —

Q. Mr. Main's — A. Mr. Main's cost of operation for the combined plant, as given in his testimony and schedules, and also the testimony for operating the plant by steam alone, as given in the testimony and schedule of Dr. Bell, the following would result: after paying —

Q. Wait a minute. That is assuming that Dr. Bell made no estimate of the cost of operation of the combined plants? A. Yes, sir.

Q. Now go on. A. After paying the \$72,000 bonus, there would be paid a rental of \$1,576 for each of the 8 mill powers.

Q. To run this load of 200 horse power? A. Yes, sir, with the present plant unchanged, and subject to the same rebate and restrictions that Mr. Main used; namely, a rebate for 23 days and the steam auxiliary operating 28 days.

Q. Now will you give the method and details of the calculations made by Mr. Blood and Dr. Bell, and just how you obtain these two results that you speak of, one for each? A. In the case of Mr. Blood, when operating the present steam plant with the present load by steam alone:—

Feed water	\$400.00
Coal, at \$4.05 a ton	10,192.00
Oils and supplies	400.00
Labor	5,680.00
Repairs	860.00
Depreciation	1,503.00
Insurances	250.00
Interest and taxes on steam plant	3,006.00
Interest on land	875.00
Total annual cost by steam power alone	<u>\$23,166.00</u>

These figures just given are taken in connection with Mr. Blood's structural valuation, new, as of January, 1898, in which he found the hydraulic plant \$73,115 and steam plant \$50,107. That is, the \$23,166 annual operating cost, as found by Mr. Blood, by steam alone, taken in connection with Mr. Main's \$24,688.16 as the annual operating costs for the combined plants, with 8 mill powers rental, restricted twenty-three days, and the steam auxiliary operating twenty-eight days, would show that \$1,310 per mill power a year could be paid for each of the 8 mill power after having paid the \$72,000 bonus.

Q. And for the purpose of operating the same load of 200 average horse power? A. Yes, sir, the present load, with the present plants unchanged. In the case of Dr. Bell, the structural value, new, of the steam plant as of January, 1898, was \$61,432. The annual operating costs by steam alone, with the present load of the plant, were:—

Coal	\$10,944.00
Ash removal	57.00
Oils and supplies	640.00
Labor	5,408.00
Repairs and depreciation	3,072.00
Insurances	307.00
Interest and taxes on steam plant	3,992.00
Interest on land	875.00
Total annual operating costs by steam alone	<u>\$25,295.00</u>

Q. That is by Dr. Bell? A. That is by Dr. Bell. Taking also the \$24,688.16 for the cost of operating the combined plants, as per Mr. Main, and already referred to, it shows that you can pay an annual rental of \$1,576 for each of the 8 mill powers, after having paid a bonus of \$72,000, the plants being unchanged.

By the CHAIRMAN.

Q. How much did you say that result was? A. \$1,576 per mill power.

By Mr. MATTHEWS.

Q. It is that for Dr. Bell? A. Yes, sir.

By Mr. BROOKS.

Q. Now, Mr. Whitham, have you examined the evidence and schedules of valuation, and the estimates as to the cost of operation of the power plant for the electric plant, as prepared by Main, Manning, Warner, Blood, and Bell, for the purpose of ascertaining whether or not allowances have been omitted by them or either of them? A. I have.

Q. I mean by allowances, allowances for fixed charges omitted by them? A. Yes, sir.

Q. And have you also made an examination of the schedules of these gentlemen, Messrs. Main, Manning, Warner, Blood, and Bell, to determine the processes pursued by them and the results obtained? A. I have.

Q. Now what were the processes pursued by these gentlemen in their calculation?

Mr. GREEN. We object.

The CHAIRMAN. Well, now, that raises that same question. I don't see that you can lay down any other rule in such a case as this, except to say that an expert has to assume certain conditions, certain facts, certain data, certain conclusions, perhaps, from other people's evidence. He may be erroneous in his assumptions; and, if so, his evidence fails. This question, however, goes beyond that to some extent, and asks this witness to give his processes that these other men worked out.

Mr. BROOKS. Exactly.

The CHAIRMAN. By that you mean the figuring process?

Mr. BROOKS. Yes, sir.

The CHAIRMAN. Mr. Witness, of course you are assuming, in looking into these other men's testimony, all this data. I don't take it from you as being the fact, although you state it. I don't know that this is going to help you any, but you are going upon the assumption all the way through that they did so and so, they did go through such and such processes. From these assumptions we will allow you to testify.

Mr. BROOKS. Now, may it please your Honors, I want to be heard on that, because he goes further than that. He says, as an expert engineer, that he can tell; that is, I am assuming that he says so. If he can tell by their figures what processes they pursue—and it is the very same question that I think your Honors properly allow, perhaps against our—although against our objection—by their experts. That is, he can take the figures of these gentlemen, I believe, and determine, as an expert hydraulic mechanical engineer, the processes they pursue. And I want to show that those processes were erroneous.

The CHAIRMAN. Well, you can; but I don't understand you. Mr. Cotter doesn't, either—

Mr. BROOKS. Why, he can take the processes by which they obtained a certain result, and he can testify to some of those processes, if I am informed correctly, that they were erroneous, that they pursued the wrong processes.

Mr. COTTER. Isn't that a matter of opinion on his part, Mr. Brooks?

Mr. BROOKS. I don't so understand it.

Mr. GOULDING. Suppose it is a matter of opinion; suppose that the witnesses on the other side have come and testified that a certain matter that they laid before you is a natural chemical combination that is found in the earth,—can't I call another expert to say that that is not a natural piece of matter, but it is produced by a certain combination of chemical elements, and he gives an opinion that that is not anything found in nature, but something produced in the laboratory? What is the difficulty with it? So it is here. Here is a mathematical result produced by these experts. Now he says he can show you how they got that figure; he can follow—he can trace those

steps, and he can show you where they stumble, where they blundered, and that they ought not to reach any such result.

Mr. COTTER. The question did not call for an opinion ; it called for a fact, didn't it ?

Mr. GOULDING. An opinion as to what processes they produced.

Mr. MATTHEWS Pursued.

Mr. GOULDING. What processes they pursued.

Mr. BROOKS. Read the question.

(Question read, as follows : "Now what were the processes pursued by these gentlemen in their calculations ?")

Mr. COTTER. I think it calls for an opinion.

The CHAIRMAN. Well, I approve personally of letting these experts criticise one another pretty sharply. Your experts, Mr. Green, took the opportunity of criticising the petitioners' experts and their processes, their opinions, the effect of what they had said, and now this witness is undertaking to do practically the same thing.

Mr. GREEN. I thought there was a distinction. For instance, I call your Honors' attention to one thing : Dr. Bell desired to make a comparison, using Mr. Foster's figures. He was not allowed to say that Mr. Foster's valuations were so and so. I was obliged to assume that Mr. Foster's valuations were thus and so, although Mr. Foster's valuations were printed in the book. That your Honors will find in the evidence. The absurdity of this in my mind is this, that Dr. Bell did not make a single estimate of the cost of operating that plant by steam alone of his own, but, for the sake of a comparison, used in fact Mr. Foster's figures, which I assume for him. This witness is allowed to show that, as a matter of fact, Dr. Bell's figures were thus and so, stating the amounts, and on that basis it would cost so much to run in comparison with the combined plants. This same question goes to the same effect,—what were the processes ? The witness is allowed to put his interpretation upon our processes, to go through and argue as an expert the method in which our witnesses arrived at the result, and to criticise those processes, stating figures and facts in connection with the same. I differ with the Com-

mission, inasmuch as, wherever it was objected to and our attention was called to it, we were obliged to assume that the evidence was thus and so.

The CHAIRMAN. Why, Mr. Green, what is the use of your saying such a thing as that? It may have happened in an instance or two, but Mr. Main's evidence is full—his schedules are absolutely not quotations, but they are nearly all through his evidence. I only say that because I looked it up yesterday, and referred to what some of the witnesses for the petitioners testified to. Now this little controversy all sprang out of a very harmless remark made by myself, which I am going to stand by; and I am going to instruct the witness again that in taking other witnesses in this case it is his assumption, and it may not be that those assumptions will turn out to be correct. If they are not correct, we shall reject them, that is all. Mr. Brooks can say to the witness, Assuming John Brown testified so and so. It is a matter of no consequence, and we cannot try any of these cases on any other principle, unless you do let experts do that. If you have been dealt with unjustly in any particular instance, call our attention to it.

Mr. GREEN. I was not putting it on that ground. Your Honor asked me a question, and I answered it, and it was a criticism; and now I say that, where objection was made, we had assumed certain figures, and that, I say, is in the record.

The CHAIRMAN. That is exactly what I say. Now with reference to this question of whether he can go to the processes, I am sure I don't know until I hear the answer.

Mr. GREEN. The "processes" is a pretty general term, and it seems to me that it is rather difficult to say that he assumed the processes. I don't know what processes means.

The CHAIRMAN. Let us see what he will testify to.

Mr. BROOKS. I don't want this thing to go on the statements of my friends on the other side, as it is entirely to the contrary. Your Honors have ruled again and again that one witness may criticise the operations of another witness.

The CHAIRMAN. I should hope so, anyway.

Mr. BROOKS. I thought so, and correctly. And this is only one of the steps in getting at it.

Mr. COTTER. We have not said anything to the contrary.

Mr. BROOKS. No, I so understand ; but it seems to me my friend says we should assume somebody went on a certain theory.

The CHAIRMAN. You can take it for granted this witness is assuming these facts as he has stated them. It may turn out he may not be right mathematically, but you may go forward.

Mr. BROOKS. I followed your Honor's direction in using the word "assuming." I did not use the word "assuming," because I have a perfect right to criticise the processes and theories ; and I want to call your Honors' attention, on page 36, Vol. IX., to two pages criticising Mr. Chase's—you remember I criticised Mr. Chase's and Mr. Foster's details? That don't make any difference, if the Court—

The CHAIRMAN. This has been done, and I will allow this witness to answer. Everybody seems to have taken up that habit. Go ahead, and answer the question.

(Question read as follows: "Now what were the processes pursued by these gentlemen in their calculations?")

The CHAIRMAN. Well, what processes did you assume, if there is going to be any,—did you assume that these gentlemen took?

The WITNESS. Of course, I assumed that—

The CHAIRMAN. I supposed you did. But Mr. Cotter suggested that amendment, so I have put it in.

Q. What processes did you assume? A. I assumed, to begin with, that they put all fixed charges on the structural values of the plant, new, as of January, 1898, instead of depreciated or actual.

Q. Proceed. A. If they had placed the fixed charges on the value of the plant as of January, 1898, instead of the new value of 1898, their findings and their conclusions and their computations would have showed a greater advantage in favor of the use of water. Had they allowed, as I assume they did not, for the cost of feed water for operating the plant by steam, the advantage in favor of the use of water power would have been greater. I want to state in that connection that I

have assumed, however, that Messrs. Warner and Blood did allow for the use of feed water, but that Messrs. Main, Manning, and Bell did not. If Mr. Warner had taken the price of coal at \$4.05 a ton instead of \$3.75 a ton, his cost in operating by steam would have been greater, and the value of water power would have been greater. Had these witnesses allowed for banking the fires, which I assume they did not do, the showing in favor of the use of water power would have been greater. I assume that Messrs. Manning, Warner, and Blood made no allowance for the cost of removing ashes; and, had they done that, the advantage in favor of the use of water power would have been greater. I assume that Messrs. Main and Manning did not allow for sufficient labor for the firing of the fires when operating the plant by steam alone; and, had they allowed for the coal passers, the saving by the use of water power would have been greater, and the value of water power would have been increased on that basis. I assume that Messrs. Manning, Main, and Warner took 2 per cent., $3\frac{1}{2}$ per cent., and $7\frac{1}{4}$ per cent., respectively, for the repairs and depreciation (fixed charge) on the steam auxiliary when operated those few days; and, had they taken a smaller figure, say 1 per cent., as I believe to be right, then the saving in favor of the use of water power would have been greater. I assume that Messrs. Main, Manning, and Warner took 1 per cent., 3 per cent., and 3.36 per cent., respectively, for fixed charges for repairs and depreciation to the hydraulic plant; and, had they taken a lower figure, such as I took, say one-quarter of 1 per cent. (which is 9 times the actual average cost at this particular plant), they would have shown a greater advantage in favor of the use of water power. Had Mr. Manning not charged 73 tons of coal for heating, when operating the combined plant, but had charged 50 tons, or had made no charge at all, there would have been a greater advantage in favor of the use of water power shown. Had Messrs. Main and Manning and Blood and Bell charged off more for repairs and depreciation when operating the plant by steam alone, they charging, I assume, respectively, 4 per cent. and 5 per cent., but had charged, as I did, 7 per cent., with the plant running

339 days of 24 hours each per year, the saving in favor of the use of water would have been greater. If these gentlemen had taken interest charges on land at a higher valuation than they did take it for electrical purposes, in connection with their annual cost of operating by steam power alone, the saving in favor of the use of water power would have been greater.

The WITNESS. I placed the value on the land—

The CHAIRMAN. Never mind that.

Q. Wait a minute. Are you through with the answer to that question? A. Yes, sir.

Mr. BROOKS. (To the stenographer.) Now I would like to have you read that question, and read slowly the answer of Mr. Whitham,—the whole business.

The WITNESS. I know the question. You can read the answer.

Mr. BROOKS. Well, I would like to have that question read, too.

The CHAIRMAN. I think it was changed a little, Mr. Brooks, wasn't it?

Mr. BROOKS. Yes, sir. It was changed by your Honor, and I thought I would like to have it.

(The stenographer read the question in its original form and as changed by the Chairman, together with the witness's answer.)

The CHAIRMAN. Whether that answer shall remain or not we will reserve for future consideration.

Mr. BROOKS. I claim, may it please your Honors, that I have a right in this case—I am not talking now about your reservation—but I have a right to ask him as an expert whether or not these men did make certain allowances, or whether or not in other instances they have made sufficient allowances, and so on.

The CHAIRMAN. This summarization may be a benefit to the counsel on both sides and to the Commissioners, but I cannot see, for one, that it is anything but a summarization.

Mr. BROOKS. It is no more a summarization—You take all through the testimony of Mr. Chase, I submit, and I submit with a good deal of fervor, and of Mr. Main, also, and some of

the others,— they have just as much of a summarization as I have in this case. They have taken certain of our figures; they have used them for certain purposes. They have criticised our figures, they have criticised our theories; and your Honors allowed Mr. Chase for two pages of this record to criticise Mr. Humphreys and his theories and his figures under our objection, because your Honor said — I do not say but what you rightly said so — that it was a part of the right of an expert to take up the figures of another expert and criticise them.

The CHAIRMAN. That is all right.

Mr. BROOKS. Now that is what we say we are doing here. I do say I have a right to go further, and not have this question a question of mere assumption. I have a right to ask him what they did do, in his opinion as an expert.

The CHAIRMAN. Ask him, and we will rule on that question. So far as this question and answer are concerned, so far as I could gather, it was the witness taking up one thing after another, which makes it very convenient for us to receive this information from an intelligent man, to show that, if they had made a larger allowance for this thing, the value of water would have been more, and so forth and so on.

Mr. BROOKS. Yes, sir, it is so to a certain extent.

The CHAIRMAN. All right. We had better look at the answer, I think, before we pass on it.

Mr. BROOKS. I say it goes further than that. He will say, if he is permitted, that for certain fixed charges they made no allowance whatever. You allowed Mr. Chase, under our objection, to take up the Gas Commissioners' reports and to testify that, although certain returns were there, they did not mean what they said. You allowed him to take up Mr. Humphrey's and Mr. Foster's figures, transpose them, reduce them, minimize them where it suited his purpose, enlarge them where it suited his other purpose.

The CHAIRMAN. All right.

Mr. BROOKS. We say it is rather late in the day to pull the reins upon the rebuttal of this case.

The CHAIRMAN. The reins are not pulled. I read forty or fifty pages of discussion yesterday upon two questions asked

of Mr. Main, which we excluded, because we said that we had information enough so that we could supply the missing links. You objected strenuously to his testifying, and we sustained your objection. We said we thought there had been put in schedules enough. Now this witness summarizes things that he says these gentlemen ought to have added or taken away. That is all right. It probably doesn't do any harm in the sense of going beyond that. But you also allowed him, or he did testify—I do not say that you allowed him—that they took such and such a percentage and he took another percentage, and that, if they had taken his percentage, things would have been different. We think we understand the—

Mr. BROOKS. It may be possible that there are some things in that answer that would come within the ruling. We say it is very probable that there are a great many things that would not come within the mental ruling that your Honor makes. But it is just the same, we say, as they have been allowed to do upon the other side. We are not, perhaps, as insistent about some things as our friends upon the other side are, or as we ought to be. But I should like to have this testimony go in, the same as you took Mr. Chase's—

The CHAIRMAN. Very well.

Mr. BROOKS. —And consider it in the future.

The CHAIRMAN. We will consider it in the future.

Mr. BROOKS. And we at that time, if there is any question raised about the competency of any of it, will do the best we can to sustain our position, may it please your Honors.

Q. Mr. Whitham, I am going to ask you this question: From an examination of the schedules of these gentlemen, Messrs. Main and Manning and Warner and Blood and Bell, upon what were their depreciation and other fixed charges based, in your opinion? A. Upon the structural value of the plant, *new*, as of January, 1898.

Q. Upon what were your depreciation and other fixed charges based? A. On the *actual* structural value of the plant as of January, 1898.

Q. And which, in your opinion, is the proper basis for the fixed charges? A. The method which I adopted.

Q. And why? A. Because, if you are going to place the fixed charges on the structural value of the plant at all, they ought to be based on the actual value of the plant; otherwise you would have to go back seven or eight years and ascertain what was the actual cost in 1891 or thereabouts, when the plant was built.

By the CHAIRMAN.

Q. That is sometimes done; isn't it, Mr. Whitham? A. I don't know of its ever being done.

Q. Going back to the original cost? A. Yes, sir. You do ascertain, as in this case, what it would cost to duplicate the plant new.

The CHAIRMAN. It is not very good evidence, perhaps, but it is very often done in these cases. Of course, the present value is the thing to be determined.

The WITNESS. That is my idea,— that the fixed charges should be on the *present value* of the plant, as of January, '98.

The CHAIRMAN. I did not suppose any one would dispute that.

The WITNESS. Well, I understand that the witnesses for the City have placed it, not on what they call the *present value* of the plant as of January, 1898, but upon what was the duplicating cost, new, as of January, 1898. That is the point in this question.

By Mr. BROOKS.

Q. That is, their depreciation is based upon the higher figures? A. Yes, sir.

Q. Not upon what the actual structural value as of January, 1898, is, but upon what it would cost to reproduce that plant new? A. Yes, sir.

Q. And your depreciation is upon the actual value? A. Yes, sir.

Q. Of that plant as of January, 1898? A. It is.

Q. That was what I desired to bring out in that connection. Now if their depreciation — the witnesses for the City — and other fixed charges had been based upon the actual structural value of this plant as of Jan. 1, 1898, instead of upon the plant, new, as of the same date, what difference would have resulted? A. The appreciation in value of the water power.

Q. And how did you arrive at that result? A. At that conclusion?

Q. Yes. A. I arrived at that from a study of the testimony and schedules given by these witnesses.

Q. Mr. Whitham, if the estimates of Messrs. Main, Manning, Warner, Blood, and Bell had been made on the basis of operating the steam auxiliary only 6 days per year, what would have been the valuation for the 8 mill powers of water with a \$72,000 bonus, operating the same plant unchanged, with a load of 200 horse power average, assuming their calculations for their respective number of restricted days to be correct, and applying the same pro rata to only 6 restricted days?

Mr. MATTHEWS. There seems to be this particular objection to that question: it assumes that our witnesses gave a valuation for 8 mill powers of water. We do not understand it.

Mr. BROOKS. Why, Mr. Matthews, they did, every one of them, in the schedules. I will take that back; I won't say every one.

Mr. MATTHEWS. Mr. Main's testimony as to the fair market value of the water power in this case was \$50,000 for the mill site and water as we wanted it per measure at \$1,500 per mill power per annum; nothing to do with 8 mill powers.

Mr. GOULDING. He puts in a schedule showing what the value would be with a load of 200 horse power. So did all the others.

Mr. MATTHEWS. That was on the market value generally.

Mr. GOULDING. It is Exhibit 173.

The CHAIRMAN. That is on what page?

Mr. BROOKS. It would be page 92 of the printed testimony of Mr. Main.

Mr. GOULDING. Schedule 14, Exhibit 173.

Mr. BROOKS. Would your Honors like to see it?

The CHAIRMAN. Yes, I would.

Mr. BROOKS. No, that is not the one. It is the other one.

Q. Is that Exhibit 174, Mr. Whitham? A. As I under-

stand it, Mr. Main's Exhibit 173 relates to \$72,000 bonus and rental at \$1,500 for 8 mill power, with twenty-three days of restriction.

The CHAIRMAN. Now what is it you want, Mr. Brooks? You ask him to value that on the same assumptions that Mr. Main did?

Mr. BROOKS. Exactly.

The CHAIRMAN. Well, he can answer that.

Mr. BROOKS. I meant to put it that way. I think I have.

Mr. MATTHEWS. The difficulty is that this was not the valuation of Mr. Main at all. It was simply a comparison between water power and supplementary steam power, and steam power alone, as operated at that particular plant. It was not used by Mr. Main in getting the valuations to which he testified in the case. It was nothing but a subsidiary calculation introduced to meet a calculation made by the other side. It was not used by Mr. Main as a part of his data, and had nothing whatever to do with his theory of valuation.

Mr. BROOKS. We made no calculation at any time to which this is a reply.

The CHAIRMAN. Let me look at it.

Mr. BROOKS. We made no calculation at any time, as I understand it, in the direct testimony upon the cost for 200 horse power load and 8 mill powers.

Mr. MATTHEWS. That is true, of course. That is not the point, though. If the witness's answer is understood to be a reply to that particular schedule, I don't know as it is worth while wasting any time over it.

Mr. BROOKS. It will go with the others, too, I presume.

The CHAIRMAN. Yes. Answer the question, Mr. Witness, if you have not.

Mr. BROOKS. (To the stenographer.) Read him the question.

The WITNESS. I understand the question. With the \$72,000 bonus and the rental for 8 mill powers, the rental value per Mr. Main will be changed from \$875.42 to \$973.63 per mill power; and for Mr. Manning, from \$739.88 to \$968.05 per mill power; and for Mr. Warner, from \$243 less than nothing to a

positive value of \$475.63 per mill power; and for Mr. Blood, from \$1,310 to \$1,407.94 per mill power; and for Dr. Bell from \$1,576 to \$1,674.06 per mill power.

By Mr. MATTHEWS.

Q. Are you reading from a paper? A. I am reading from my estimate sheet, yes, sir.

By Mr. BROOKS.

Q. How do you reach these results? A. These results are all occasioned by changing the days of operating the steam auxiliary from the restricted days assumed by the different witnesses to 6 days, and that change results in changes in the rebate, in the amount of coal burned, ash removed, oils consumed, labor on the water plant and steam auxiliary plant, repairs, and depreciation.

Q. Give the details. Have you the details? A. I have the details, yes, sir.

Q. Be kind enough to put them in,—the details. They won't let you put the schedule in. A. In the case of Mr. Main—

The CHAIRMAN. Hasn't he already done that?

Mr. BROOKS. He certainly has not, may it please your Honor.

The CHAIRMAN. Go ahead.

The WITNESS. In the case of Mr. Main, for operating the combined plants there would be:—

An increased charge, due to there being less rebated days, of	\$920.00	
The coal would be reduced		\$626.89
The ash would be reduced		3.00
The oils would be reduced		235.72
The labor on the water plant would be increased . . .	7.71	
The labor on the steam auxiliary would be decreased .		676.66
The repairs and depreciation on the water plant would be increased	48.90	

This makes a net decrease from the cost of operating the combined plant of \$785.67.

By the CHAIRMAN.

Q. A year? A. A year.

By Mr. BROOKS.

Q. On the basis of six days when they operate by steam?

A. Six days when they operate by steam. And this reduction changes the rental, as I have noted already, from \$875.42 per mill power for each of the eight mill power to \$973.63 per mill power, according to Mr. Main's figures and testimony, after paying \$72,000 bonus.

Q. And with this same load of 200 horse power at the station? A. At the same station, unchanged. Now I have the details also for other witnesses, if you wish them.

The CHAIRMAN. Perhaps you had better print those, unless you want them read.

Mr. BROOKS. I would be very glad to, but I supposed I was prohibited by reason of your ruling yesterday.

The CHAIRMAN. We made no ruling where parties agreed.

Mr. BROOKS. There has been no agreement about this, as to the admission of schedules.

The CHAIRMAN. Perhaps Mr. Matthews will agree.

Mr. MATTHEWS. No, sir, we do not care to have any more schedules given in rebuttal.

The CHAIRMAN. Then go ahead and read them.

The WITNESS. In the case of Mr. Manning's testimony and schedule, the effect of reducing the number of restricted days, so that there will be only six days when the steam auxiliary is operated, will result as follows:—

An increased cost in water rental of	\$1,000.00	
A decrease in the coal of		\$1,157.33
Decrease in oil		363.33
Increase in labor on water plant	11.48	
Decrease in labor on steam auxiliary		350.00
Decrease in repairs and depreciation on steam plant		1,099.66
Increase in repairs and depreciation on water plant	137.72	

Making a net yearly decrease of \$1,825.12, and resulting in changing the rental from \$739.88 to \$968.05 per mill power for each of the 8 mill power, after paying \$72,000 bonus, as per Mr. Manning's schedule and testimony.

Q. Now take up Mr. Warner next. A. The effect of oper-

ating the steam auxiliary only 6 days would make the following changes in the cost of operating the combined plant, as per Mr. Warner's testimony and schedule:—

An increase in water rental, due to less rebated days of	\$1,820.00	
Decrease in coal		\$2,046.93
Decrease in oil		576.60
Decrease in labor on steam auxiliary		2,674.68
Decrease in repairs and depreciation on steam auxiliary		3,001.11
Increase in repairs and depreciation on water plant .	727.26	

This makes a total net decrease in Mr. Warner's schedule and testimony of \$5,752.06 per year, which results in changing the annual rental from \$243 less than nothing to \$475.63 per mill power, for each of 8 mill power, after paying \$72,000 bonus.

Q. More than nothing? A. Oh, yes.

Q. Now take the next individual. A. When Mr. Main's estimate and his testimony is taken, with this change for restricted days (down to 6 days of operating by steam power for the combined plant), and compared with the operating cost by steam alone, as given by Mr. Blood—

Q. You mean "and compared"? A. And in connection with the operating cost by steam alone, as given by Mr. Blood, it changes the result per horse power from \$1,310 to \$1,407.94 for each of 8 mill power, after paying \$72,000 bonus. And in the same manner the change for Dr. Bell's testimony and schedules will be—taken in connection with Mr. Main—from \$1,576 to \$1,674.06 per mill power for each of 8 mill power, after paying \$72,000 bonus.

Q. That would be the rental value? A. Yes, sir, the rental value.

Q. According to Dr. Bell's figures? A. Yes, sir.

Q. Now how much have these various gentlemen allowed for feed water for the combined plant in their schedules, if anything? A. Mr. Main and Mr. Manning and Dr. Bell made no allowance. Mr. Warner allowed \$468 and Mr. Blood \$400 per year.

Q. What, if anything, have these gentlemen or either of them allowed for banking fires? A. Nothing.

Q. Do you understand my question was for the combined plant? A. I understand you referred to both.

Q. And for the combined plant. A. Yes, sir.

Mr. BROOKS. I will change my question, I guess.

(Question read.)

Q. Is that for the combined plant or the steam alone? A. That was for the steam alone. In the combined plant none of them made any allowance.

Q. That was my question. Perhaps I didn't make it clear to you. And have any of these gentlemen made any allowance, in your opinion, in their schedules for the banking of the fires? A. No, sir.

Q. In either of the present plants?

The CHAIRMAN. Didn't that long answer of his cover all this, Mr. Brooks?

Mr. BROOKS. I think not, may it please your Honor.

Mr. MATTHEWS. I think he distinctly said he assumed they didn't make any.

Mr. BROOKS. I am going further than that, if I am permitted, and ask him whether or not, in his opinion, they did, calling his attention to a few specific things. I should be very glad to call your Honor's attention at any time —

The CHAIRMAN. I am perfectly willing to go into any discussion of that kind with you, if you desire, and take this record on that question. You were very strenuous in your objection to the respondent putting in testimony like this testimony that you are just speaking of. You know and I know that where a witness is testifying to a fact, and objection is made to having that fact repeated by another witness, that you must drop back on the record. You are asking this witness now how much these people allowed for feed water. That already appears in the evidence, how much they allowed.

Mr. BROOKS. May it please your Honor, they asked how much they allowed in their schedule. Haven't I a right to do so, and haven't I a right to go further, and show by him what should have been allowed?

The CHAIRMAN. You can do that.

Mr. BROOKS. Well, that is what I am doing. I was endeavoring to escape a leading question, and his answer will be that they did not allow anything.

The CHAIRMAN. Well, doesn't the record show it just the same?

Mr. BROOKS. I don't know.

The CHAIRMAN. We can't take his opinion as to what the evidence is.

Mr. BROOKS. I don't know what your Honor may say about this record, after long years. Your Honor might say that they allowed this particular item in some one of the other items, although it is not particularly designated.

The CHAIRMAN. Where there is any latent ambiguity —

Mr. BROOKS. I don't know how much there is. There is an almighty lot of latent ambiguity in this case.

Mr. GREEN. I don't see how he can tell whether it is under some other item any better than the Commission can.

Mr. BROOKS. I am asking him as an expert just the same question you asked of Humphreys, Foster, and Blood, I believe.

The CHAIRMAN. Let us see Mr. Chase's evidence.

Mr. GOULDING. There are 413 pages of it, and it is mainly a criticism of the evidence of the others.

Mr. MATTHEWS. Part of it was under cross examination.

Mr. BROOKS. I deny that, and say you know better.

The CHAIRMAN. Well, you needn't look it up, Mr. Brooks.

Mr. BROOKS. I should be very glad to file a brief on Chase in this case.

Mr. GREEN. There are ways in which an accountant would stand on a different basis, but I ought not to speak about that.

Mr. BROOKS. I don't know whether they would or not. (Last question and answer read.)

The CHAIRMAN. I want to say one thing, Mr. Brooks,— that I sympathize with you in trying to conduct rebutting evidence examination in this case, because it must be very hard work. Perhaps I don't indicate my sympathy very much.

Mr. BROOKS. Oh, I think so, yes. I take everything in good part. I know you are trying to do what you think is right.

The CHAIRMAN. We are trying, of course, to keep the petitioner down to rebuttal, and while, of course, we ought not to be too close with you on rebuttal on such a case as this —

Mr. BROOKS. We would be very much more brief, if we could have put in our schedules; but we spent all day yesterday and most of last night in getting this in shape to put in by question and answer.

Q. Now, if these gentlemen allowed for feed water and banking as well as charging for operating the steam auxiliary alone for six days, how would the rental values of the water power have been affected?

The CHAIRMAN. You mean to what extent?

Mr. BROOKS. Yes, to what extent; and I should be very glad to have him state in what ways, giving the details, to save another question and another answer.

A. The rental in the case of Mr. Main's testimony and schedules,—there would have been a saving in favor of the water power as follows:—

By feed water	\$343.00
By banking of fire	520.00
By ash	15.00
Making a total of	<u>\$878.00</u>

which would result in changing the rental from \$875.42 to \$1,083.50 for each of the 8 mill power and \$72,000 bonus.

The CHAIRMAN. I don't understand that. You say in addition,—if they had added certain things?

The WITNESS. Yes.

The CHAIRMAN. And how much did it amount to, eight hundred and something in the first calculation you made?

The WITNESS. The sum of those changes which they should have made for feed water and for banking and for ash amounts to \$878; and, if they had changed or taken into account changes resulting from having less restricted days, then it makes the rental per mill power —

Q. Rental value for mill power? A. Rental value for mill power, \$1,083.50.

The CHAIRMAN. What do you mean by \$878, all together?

The WITNESS. I mean that if — yes, all together.

The CHAIRMAN. Per year?

The WITNESS. I mean a change — a change in their testimony.

Q. You mean by that if they had taken into consideration the banking of the fires, the restricted days, the ash, and — what is the other? A. The feed water.

Q. The feed water, — the rental value according to their figures would have been increased to — according to Mr. Main's figures, would have been increased to what? A. Taken also in connection with the savings resulting from having only six days of steam operation by the combined plant, would make the final rental value of the water \$1,083.50 per mill power instead of \$875.42.

The CHAIRMAN. Did not Mr. Main's figures show \$875?

The WITNESS. Yes, sir.

Q. Don't the changes that you say, with the limiting of the restricted days down to six, don't that carry it up, according to your claim, so that it would be over \$900? A. Yes, it carries it up, the effect of all this.

Q. How far? From \$875 up to \$900 and something. What was it?

Mr. MATTHEWS. \$973.62.

The CHAIRMAN. \$973. Now this difference that you speak of with reference to feed water, and so forth, makes a difference one — \$973 and \$1,000 and something plus?

The WITNESS. Yes, sir, that is it.

Mr. MATTHEWS. Might I be permitted to interject we do not admit Mr. Main figured \$1,084.42 as the value of any thing?

Mr. GREEN. You undertook to change the market value when he was not figuring market value at all.

Mr. BROOKS. I said rental value.

Mr. MATTHEWS. He was not figuring rental value.

Mr. BROOKS. I am going to put my question as well as

I can, unless I am prohibited; and I will agree now it may go on the record the other side don't admit anything.

Mr. MATTHEWS. We certainly don't admit that Mr. Main ever gave \$875 as the value of anything.

Mr. GOULDING. The Commission will be satisfied of it when they come to examine the evidence.

The WITNESS. In the case of Mr. Manning, the saving in feed water saving due to feed water charges, would be in favor of water power:—

For feed water	\$343.00
For the banking of the fires	520.00
Removal of the ashes	55.00
<hr/>	
Making a total credit item, in favor of the use of water power, of	\$918.00 yearly

And this saving, taken in connection with the savings resulting from operating the combined plant only six days, the steam part of the combined plant, would make a rental value of \$1,082.75 per mill power instead of \$739.88 per mill power for each 8 mill power, after paying \$72,000 bonus. In the same way the change of the credit items in Mr. Warner's schedule and testimony would be,—

For feed water	\$343.00
For banking fires	520.00
For ash	55.00
<hr/>	
Making a net total saving, in favor of water power, of	\$918.00

for these three items, which saving, taken in connection with the saving effected by operating steam auxiliary for only six days, makes the rental value —

Q. As per Warner? A. As per Warner, \$590.40, actual, per mill power, as compared with a negative value of \$243 per mill power.

Q. And these are all upon the assumed load of 200 horse power at the station? A. Yes, sir. And, furthermore, they are on the basis of making no change whatever in any percentage allowance, or any allowance for the fixed charges, other than those I have specified already. In the case of Mr. Blood, the same saving on \$918 would be realized in favor of the use

of water power, which, taken in connection with the saving effected by operating of the steam auxiliary only six days, would make the rental value \$1,522.75 instead of \$1,310 per mill power for each of the 8 mill power, after paying \$72,000 bonus.

Mr. MATTHEWS. What is the figure?

Mr. BROOKS. Read the answer.

(Last answer read.)

The WITNESS. And in the same manner the saving in the case of Dr. Bell would be \$343 for feed water and \$520 for banking of fires, or a total of \$863 saved in favor of the use of water power, which saving, taken in connection with the savings already noted—

Q. For the six days? A. For operating the steam auxiliary only six days per year, would make the rental value \$1,782 per mill power for each of the 8 mill power instead of \$1,576 per mill power, after paying the \$72,000 bonus.

Q. What fixed charge, Mr. Whitham, in your opinion, in per cent. is necessary for the steam auxiliary operating six days in the year under the same average load,—I mean, that is, fixed charge for repairs and depreciation? A. That is 200 horse power load, you mean?

Q. Yes, I mean the same average load, 200 horse power.

A. And you are asking me in reference to the combined plant?

Q. Yes. A. 1 per cent. would be my answer.

Q. Can the exhaust steam of the present steam plant be used for heating? A. The buildings?

Q. In buildings, yes. A. Only by making a very extensive change in the steam heating system of the building. In other words, the steam heating system of the buildings is laid out for high pressure steam, not for exhaust or low pressure steam.

Q. And with the plant as it is, could the exhaust steam be used for heating the buildings? A. No.

Q. What? A. No.

Q. Mr. Whitham, did I ask you how you arrived at your

figures for the annual expenditure for labor on the water plant? I have forgotten. I think I did. A. You did not ask.

Q. Well, then, I will ask you the question, how did you arrive at the figures you have stated in your previous tabulations for your estimate on the labor on the water plant per annum? A. From the testimony of Mr. Samuel Winchester, given on April 1 of this year.

Q. In your opinion, Mr. Whitham, what is the value of the land covered by this electric light station per foot, divorced from buildings, water power, steam power, for electrical purposes?

Mr. GREEN. Just wait a moment. I object to that.

The CHAIRMAN. We think you opened that in chief?

Mr. BROOKS. Exactly.

Mr. GREEN. Well, I object to the qualifications —

The CHAIRMAN. I say that was gone into in chief. You showed the value of the property.

Mr. BROOKS. Not at all.

The CHAIRMAN. Yes.

Mr. BROOKS. Will you allow me just a moment?

The CHAIRMAN. I will.

Mr. BROOKS. They have put on witnesses here to testify to the value of this land for electrical purposes, under our objection. We put on evidence, if we put on any, as to what we considered the value of the land. They have been allowed to put on evidence as to the value of land for electrical purposes down the river and up the river. Now we say we have got a perfect right, and it is perfectly legitimate in answer to prove what the value of this land is for electrical purposes.

The CHAIRMAN. You mean Mr. Main answered that question?

Mr. BROOKS. Yes, sir, not only Mr. Main, but more.

The CHAIRMAN. I think we will exclude it, Mr. Brooks.

Mr. BROOKS. Well, I would like to save an exception.

The CHAIRMAN. We think you have already put the testimony in.

Mr. BROOKS. Whether or not, as a matter of fact, you

think we have put in the evidence of the value of the land where the electric light plant is?

The CHAIRMAN. Yes.

Mr. BROOKS. I would like to know where it is.

The CHAIRMAN. \$72,000.

Mr. GOULDING. \$72,000 with the water plant?

The CHAIRMAN. Yes.

Mr. BROOKS. That is, the water rate is \$72,000?

Mr. GOULDING. We have not, as I understand it, put in the value of the land separate from the water plant.

Mr. BROOKS. We have never divorced the land from the water power, may it please your Honor, in any of our estimates.

Mr. COTTER. At the outset, Mr. Brooks, we thought it was open to you, and we had occasion to say that you could show the value of this property or any part of it for any of the purposes for which it was adapted or for which it could be used.

Mr. BROOKS. Yes, sir.

Mr. COTTER. And, having been so understood, we think that scope having been given, whether you availed yourself of it or not, it was open at the outset as part of your original case.

Mr. BROOKS. May it please your Honor, wasn't this the rule, that the land and the water together might be valued for any and all purposes? but there was no ruling with reference to the valuation of the land separate from the water for any and all purposes. But that is hardly raised by this question.

The CHAIRMAN. Do you expect to show by this witness that the land and water power was worth more than \$72,000 for any purpose?

Mr. BROOKS. No, may it please your Honor; but I am divorcing the land from the water power, from the steam power, from all buildings and from the hydraulic plant, and I am asking him as to what, in his opinion, that land was worth for electrical purposes; and now we did not open up that situation, and it was not any part of our duty to do it.

Mr. COTTER. You were certainly at liberty to introduce that evidence at the outset, Mr. Brooks, and take the whole property or any part of it, so long as it was open to you at that time. During the course of the discussion we did have occasion to say, and did say, that you could show the value of this property for any use.

Mr. BROOKS. I don't think I make myself clear to anybody here, and it is my own stupidity that I do not.

The CHAIRMAN. I understand you now to ask him the value of the land alone, divorced from the —

Mr. BROOKS. For a certain purpose, in view of the testimony that they put in through Mr. Main, an electrical hydraulic expert, a steam expert, but who sought to qualify, and did, to your Honor's satisfaction, — that is, to the extent of letting the testimony in, — what he considered this land worth for electrical purposes, and then, don't you know, your Honors, you said, — he testified that certain materials could not be built there, certain industries could not be carried on there. That wasn't any part of our duty —

Mr. COTTER. Mr. Main's testimony was wholly in reply to your theory of the case.

Mr. BROOKS. Not as to land, may it please your Honor, because we didn't put in a particle of evidence as to the value of this land apart from the water power.

Mr. COTTER. As to the property, whether land alone or anything else.

Mr. BROOKS. This was a specific question; aside from all the other property that was there, what was the land in his opinion worth for a certain purpose.

The CHAIRMAN. I think Mr. Main was simply asked as to what the value of the whole property was.

Mr. BROOKS. I think I can find it. Well, I don't know. If you will permit me, I will drop that, and I will find it at intermission, if I can.

The CHAIRMAN. Let us have something else.

Q. Mr. Whitham, have you made an estimate on the cost of operating the electric light station power plant of water

power with the present steam auxiliary, on an average load of 200 horse power, variable, as compared with steam power alone, using the present engines changed to condensing, with a cooling tower, and paying \$72,000 bonus and rental of \$1,500 per annum per mill power for eight mill powers? A. I have.

The CHAIRMAN. What does that cover, Mr. Brooks?

Mr. BROOKS. Their estimates. Mr. Warner, you remember, had in a cooling tower and some of the others. If your Honor is in doubt about it, I can find it.

Mr. MATTHEWS. No, we admit that. We object, on the ground it is part of his case in chief.

The CHAIRMAN. Is that the only objection?

Mr. MATTHEWS. I don't know that I have anything further to add. It is very similar to some questions put yesterday. We think all this line of evidence should have been gone into in chief, if at all.

Mr. BROOKS. I should like to know how and why.

Mr. MATTHEWS. Why, the witnesses for the Company were all of them asked to make calculations respecting the comparative cost of operating this plant by steam power and by water power and auxiliary steam power, and you then had the opportunity of considering how the plant should be operated, whether by means of a cooling tower, and whether run condensing or not. Some of them put in alternative estimates as to operating the plant condensing or non-condensing, and they might, of course, have put in the cost of using a cooling tower, if they had thought of it. In regard to the average load, they took 231 horse power as the average load. If they made a mistake, it was their fault, and not ours. They apparently now think they have the average load too high; and their purpose is to recast all their evidence on this line, taking different assumptions from what they took at the outset. We say they are attempting to try their case over again in rebuttal.

The CHAIRMAN. Before adjourning, I want to ask you, Mr. Brooks, aren't you travelling now unconsciously away from the line that you ought to follow?

Mr. BROOKS. No, sir.

The CHAIRMAN. Just think it over during intermission.

Mr. BROOKS. Well, I have thought it over. I shall be of the same opinion still, and I think that we can show it to your Honor. What right have we got to assume that they would assume 200 horse power or various other horse power, or that they would put their plant upon the river bank and stick in a cooling tower, or that they would take the plant and take it away from its present site? Haven't we got the right to meet them upon their own theories?

(Noon recess.)

AFTERNOON SESSION.

JAY M. WHITHAM, *resumed.**Direct examination by Mr. BROOKS, continued.*

The CHAIRMAN. We will admit the question that was pending this morning.

Q. And you will say yes, I suppose, to the question? A. Yes, sir.

Q. And what is that estimate, giving it to us in its various forms and phases? A. In that estimate I have taken the structural values as I actually found them in my valuation of the plant structurally as of January, 1898; namely, the hydraulic plant \$89,449, steam plant \$50,071. I have added to that the cost of the condenser and cooling tower, \$7,200. I found that the annual cost of operating the plant by steam alone will be modified over what it would be if the plant were operated unchanged, this modification being due to the effect of introducing the condenser. I found that there will be a saving in the annual operating expenses by steam alone of \$1,544 for coal alone, and a saving of \$8 in ash, making a total saving by condensing of \$1,552. But there will be increases in expenses due to the change in the plant, as follows:

Increase in oil and supplies per year	\$365.00
Increase in feed and condensing water per year	238.00
The cost of handling the water at the cooling tower and of operating the fan amount to	1,309.00
Repairs and depreciation on the condenser and cooling tower will be,	504.00
The increase in insurance will be	36.00
Increase in taxes and interest	378.00
There will be, then, a net increase in the cost of operating this plant, by virtue of making it condensing, of	1,278.00
Which, added to my previous estimate of the annual cost of operating by steam alone, to which I testified this morning, namely	23,741.00
Makes the total annual cost of operating the plant, with the present load, by steam power alone, with condensing engines	\$25,019.00

I had previously found, by my estimate given this morning, that the total cost of operating the combined plant under the present load, with six days' steam operation of the auxiliary—

Q. And paying the \$72,000? A. Paying the \$72,000 bonus and the rental on 8 mill powers of \$1,500 each to be \$23,594. Comparing these figures, there is an annual saving by the use of water power of \$1,425, so that the rental value of 8 mill powers would be at the rate of \$1,678 each after having paid a bonus of \$72,000. That would be equivalent to paying a bonus of \$107,625 for the 16 mill powers and a rental of \$1,500 for each of the 8 mill powers.

Q. Have you made an examination of the estimate by Mr. Main upon this same basis, as given in his Exhibits 172 and 173? A. I have.

Q. Well, with what result, and how obtained? A. With the result that the rental value would be \$714.72 per mill power for 8 mill power, after paying \$72,000 bonus, and is obtained as follows: according to the testimony and schedules of Mr. Main, the structural values, new, as of January, 1898, were: hydraulic plant, \$69,850; steam plant, \$43,060. Operating by means of using the condenser, for which he makes no allowance in installation costs, there would be, he claims, a saving in fuel of \$1,285.56, which would make the annual costs of operating by steam alone, when condensing, \$18,405.94, according to his testimony and schedules, which would result in a loss by the use of water power of \$6,282.22 per year, which would be equivalent to paying \$714.72 for each of 8 mill power annual rental, after paying \$72,000 bonus.

Q. And upon a load of 200 horse power? A. Yes, sir. Had Mr. Main included the charges for the increase in oil and supplies (by virtue of a condensing plant on this site, which would have to be of the cooling tower type), and had he included the cost of increase in feed and condensing water, and had he included the cost of pumping the water up to the top of the tower and cooling the water in the tower by operating the fan, and also the repairs and depreciation of the condenser part of the plant, and insurance on it and taxes and interest, all

of which amount to \$2,830, or \$353.75 per mill power for each of the 8 mill power, his rental, instead of being \$714.72 per mill power for 8 mill power, would have been \$1,068.47 for each of 8 mill power, after paying the bonus; and had he further modified his testimony and schedules so as to have operated his combined plant only six days of the year, that is, the steam auxiliary part of his combined plant —

Q. For six days of the year? A. For six days of the year, the result in saving in oil, labor, etc., would have made, together with the substitution for these omissions on operating charges and fixed charges for the condenser, a rental value of \$1,276.47 for each of 8 mill power, after paying \$72,000 bonus.

Q. Have you made an estimate of the cost of operating the electric light plant by power, upon a basis of six restricted days, with an average load of 200 horse power, with a bonus of \$72,000 and a rental of \$1,500 for 8 mill powers per annum, and compared the same with the cost of operating under the same conditions as to load at the station, with the cost of operation by a compound condensing plant with cooling tower, and with what result? A. With the result that under those conditions the rental value is \$1,551 per mill power for each of 8 mill power, after having paid the \$72,000 bonus, which is equivalent to \$82,250 bonus and \$1,500 rental for each of 8 mill power.

Q. And how did you arrive at that result? A. By an estimate consisting of the following items. I found that the cost of operating by steam power alone, when the plant is changed to compound condensing, would consist of structural values as follows:—

The steam plant, according to my valuation, actual, as of January, 1898, was	\$50,071.00
The cost of compounding the engines	9,000.00
The cost of the cooling tower and condenser	7,200.00

The operating costs of this plant by steam alone would be:

For feed water	\$254.00
Coal, at \$4.05 a ton	7,723.00

Ash removal	\$40.00
Oils and supplies	1,095.00
Labor on steam plant	4,160.00
Repairs and depreciation on the steam plant	4,639.00
Insurances	331.00
Interest and taxes on the plant	3,479.00
Interest on the land of the plant divorced from water power and buildings	1,239.00
(Or 4 per cent. on the area of the land, at 75 cents per square foot.)	
Cost of pumping the water to the top of the cooling tower and operating the fan	1,044.00
Making a total yearly cost of operating this compound condensing steam plant, on the present load, on the present site . .	
	\$24,004.00

I found that the cost of operating the combined plants unchanged, with the auxiliary steam plant in use 6 days, to which I testified this morning, is \$23,594, which, compared with the costs of operating the plant compound condensing and by steam alone, shows a saving by the use of water power of \$410 a year, which is equivalent to paying a rental of \$1,551 per mill power for each of 8 mill power, after paying \$72,000 bonus. Now, if this bonus had been taken at \$36,000 instead of \$72,000, there would have been a saving of \$1,440 in interest charge alone on the bonus, and the rental value then would have been \$1,731.25 for each of 8 mill power, after paying a bonus of \$36,000.

Q. Now I notice that you take the interest on the land at 75 cents per foot. Where did you obtain that figure of 75 cents per foot?

Mr. GREEN. I wanted to state, as that was going in, that I observed myself that it was a price of 75 cents a foot, and, so far as it is an expression of any opinion of the witness of value, I suppose, of course, you will save it to us.

Mr. BROOKS. I do not ask him how he obtained it, but where he obtained it.

A. I take the same rate that Mr. Warner did in his testimony, 75 cents a foot.

Q. That is, you assumed his figures? A. As he did.

Q. That is, you assumed his figures? A. Yes, as to the rate per foot.

Mr. BROOKS. I should like to ask this witness, if I am permitted now, your Honors, whether or not in assuming this figure of 75 cents from Mr. Warner, in his opinion that land is worth more or less than 75 cents per square foot for electrical purposes?

Mr. GREEN. We object to it.

The CHAIRMAN. That same question came up before.

Mr. BROOKS. Substantially the same question, but in rather a different connection.

The CHAIRMAN. We think we will exclude that, Mr. Brooks.

Mr. BROOKS. Very well.

Q. Mr. Whitham, have you prepared an estimate showing the cost of operating the present combined water and steam plants on a steady 16 mill power load for 24 hours, with \$72,000 bonus and a rental of \$1,500 per mill power for 16 mill power, as compared with a compound condensing engine, on this ground, under the same loading? A. I have.

Q. And what do you determine to be the rental value of each of those 16 mill powers under those circumstances?

Mr. MATTHEWS. Is this upon new assumptions, Mr. Brooks?

Mr. BROOKS. No, it is taking your assumptions.

Mr. GREEN. We never assumed any such thing.

Mr. MATTHEWS. I do not understand we made any such assumption.

The CHAIRMAN. What witness made that assumption, Mr. Brooks?

Mr. BROOKS. I will tell you in a minute. We say that Messrs. Main and Manning both made that assumption. I refer your Honors, if there is any question about this, to Mr. Main's schedule, Exhibit 177, and Mr. Manning's, Exhibit 198.

Mr. GREEN. It is an entirely different proposition, as we understand this. I have found Exhibit 177. I do not understand that it is the question that is assumed at all.

Mr. BROOKS. I submit it was. I would like to have your Honors look at the exhibit as we have it.

The CHAIRMAN. It is the value of 16 24-hour non-permanent mill powers for paper mills. That was changed, I believe.

Mr. GREEN. Yes, to relate to any concern using continuous power.

The CHAIRMAN. What is your question, anyway?

(The question was read.)

Mr. GREEN. Did your Honors understand the point that I called your attention to, that our schedule is not put on this lot? It is not limited, while the question put to Mr. Whitham is limited.

Mr. BROOKS. We purpose to put this — because we consider this is the lot in question — this 16 steady mill power 24-hour load right on this particular lot, which we say is the plant that you are to estimate, and not some other.

The CHAIRMAN. What do you say, Mr. Turner, about that?

Mr. TURNER. I should want to study it more before I should give an answer.

Mr. BROOKS. Then I would ask your Honors to receive this testimony the same as you have received various testimony in this case.

The CHAIRMAN. Go ahead, then, Mr. Brooks, on that theory; and Mr. Turner will look^a at the schedule later,—or look at it now, if he wants to. We will take the answer. I confess I do not understand it.

Q. Now have you got the question? A. Yes, sir. Under such conditions —

The CHAIRMAN. Mr. Turner says he does not find it in here.

Mr. TURNER. I do not find the whole of your question in here,—in this schedule. I do not find enough in this schedule to cover the whole of your question.

Mr. BROOKS. As I understand it, if you will read the testimony in connection with the schedule, I think you will find that Mr. Main estimates upon a 16 mill power, steady mill power load of 24 hours, and located it somewhere.

Mr. TURNER. Anywhere.

Mr. BROOKS. Anywhere; and we want to apply that right to this particular plant.

Mr. GREEN. What we understood Mr. Main was doing was to get at a general valuation of non-permanent power. He studied the question in two ways, first by figuring out what it would cost in the abstract to run by steam as compared with running by water, not for the purpose of putting it on this lot or any other lot, but simply a general study. Then, in addition to that, he took his general knowledge of the subject, and modified the figures by his general experience and general knowledge to such an extent as he deemed proper. But this is purely an abstract study.

Mr. GOULDING. I do not understand that rebuttal is confined or restricted, or in any way "cabined, cribbed, confined," by reason of the purpose of the witness. The only thing that restricts rebuttal is that the testimony shall be in answer to some competent evidence put in by the other side. Now this is competent evidence. That is to say, it may be competent evidence. It is assumed for the purpose of the admission of it to be competent. Now we ask to answer it. We say it doesn't make any difference whether it is collateral or direct. If it is competent evidence, we have the right to meet it.

Mr. BROOKS. And it was admitted.

Mr. GOULDING. It was admitted.

The CHAIRMAN. We will take the answer.

Mr. MATTHEWS. This is Exhibit 177, isn't it, that the witness is criticising?

Mr. BROOKS. Yes, and you understand we also take in Mr. Manning's Exhibit 198, which was upon the same theory, as we understand it, as Mr. Main's.

A. Under these conditions, the rental value is \$3,229 per mill power per year for each of the 16 mill power, after paying \$72,000 bonus, which is equivalent to \$3,332 per mill power a year rental for each of the 16, with free bonus.

Q. And how do you arrive at that conclusion and what are

your processes and details? A. By making an estimate of the cost of operating such a load by a combined steam and water plant as compared with steam power alone. As a basis of this, I take actual structural values as of January, 1898, as follows:—

Hydraulic plant	\$89,449.00
Steam plant	50,071.00
Real estate and privilege	72,000.00
Cost of compounding the engines	9,000.00
Two extra boilers	3,000.00
Cooling tower and condenser	15,000.00

I take with this steady 16 mill power load a mill power as 70 horse power.

Q. Why? A. From the testimony of Mr. A. F. Sickman, the wheels being operated at full gate, which would make 16 mill powers, equivalent to 1,120 horse power, which would be net and effective on the shaft. The corresponding engine load to produce such a net and effective load on the shaft would be 1,244 horse power. I have taken the plant as running 339 days, 24 hours each, and as running by water power on the combined plant all those days except six of 24 hours each. The annual operating cost would be as follows for the combined plant—

Q. Before you go on, from what source do you obtain the 339 days? A. From the new offer.

Q. Oh, yes, I see. Go ahead. A. The annual operating costs for the combined plant would be as follows:—

Water rental on 16 mill power	\$24,000.00
Feed water for 6 days' running of steam auxiliary	39.00
Coal for the auxiliary, at \$4.05 cents a ton, for 6 days	1,227.00
Ash removal, at 25 cents a ton	6.00
Oils and supplies	150.00
Wages on water plant	50.00
Wages on steam plant for 6 days	200.00
Repairs and depreciation on the steam plant	600.00
Repairs and depreciation on the water plant	324.00
Interest and taxes on the water plant	4,696.00
Interest and taxes on the steam plant	2,629.00
Insurances	250.00

Total cost per year, neglecting the fixed charges on the land and privilege, when operating the combined plants would be \$34,171.00

The annual cost of operating by steam power alone would be as follows:—

Feed and condensing water	\$2,784.00
Coal, at \$4.05 a ton, using 1½ pounds of coal per horse power per hour	33,626.00
Removal of ashes	174.00
Cost of pumping water up to the top of the tower and operating the fan for cooling the same	5,627.00
Oils and supplies	1,643.00
Wages	8,840.00
Repairs and depreciation on steam plant	6,412.00
Interest and taxes on the plant	4,046.00
Insurances	325.00

Making a total cost per year, neglecting the fixed charges on land and privilege, of \$63,477.00

Which, if compared with the cost of operating the combined plants per year, also neglecting fixed charges on land and privilege, shows an annual saving in favor of water power of 29,306.00

Corresponding to an annual rental per mill power of 3,332.00

For each of 16 mill power, with free bonus.

Now, if bonus of \$72,000 is charged and the interest on land and water privilege is included, then the annual rental value would be \$3,229 for each of the 16 mill power, of course, after paying the \$72,000 bonus.

Q. Have you examined the schedules of Messrs. Main and Manning, and their testimony with reference thereto, relating to this same steady 16 mill power 24-hour load? A. Yes, sir.

Q. And what results do you obtain from the schedules of each of these gentlemen, and how do you obtain such results?

The CHAIRMAN. Do you want the details of that?

Mr. BROOKS. Yes, sir.

A. According to Mr. Main's testimony and schedule, Exhibit 177, with free bonus, the rental value of 16 mill power would be \$1,225 each, and, according to Mr. Manning's, under the same condition, the rental value would be \$1,146.25 for each of the 16 mill power. The schedule, Exhibit 177, and testimony of Mr. Main, shows the hydraulic plant structurally, new, as \$69,850, and the steam plant at \$45,000 when used in connection with the water plant and \$50,000

when used alone. Mr. Main's horse power corresponding to 16 mill powers is 1,040, or 65 horse power to the mill power; and he took a corresponding engine load of 1,000 horse power, and operated his plant for 306 days of 24 hours each. His annual costs of operation of the combined plants are:—

Rental for 16 mill powers	\$24,000.00
Coal, at \$4.05 per ton, using 2 pounds of coal per horse power per hour, and making no allowance for banking	1,996.65
The removal of the ashes	10.00
Oils and supplies	400.00
Wages of the water plant	612.00
Wages of the steam plant	560.00
Repairs and depreciation on the steam plant	900.00
Repairs and depreciation on the water plant	698.50
Interest and taxes on the water plant	4,191.00
Interest and taxes on the steam plant	2,700.00
Insurances	150.00
Total annual cost of operating the combined plant	\$36,218.15

When operating by steam alone —

By the CHAIRMAN.

Q. Where do you get this from Mr. Main's evidence? A. Exhibit 177.

By Mr. GREEN.

Q. How much did you say your total was? A. \$36,218.15.

Q. I cannot find it. Have you changed his figures in any way? Have you revised his figures in accordance with any condition or belief of your own? A. No, sir.

Q. Or have you simply taken his figures? A. Simply taken his figures.

By Mr. MATTHEWS.

Q. Haven't you made computations from them? A. Conclusions only.

The CHAIRMAN. Well, go ahead.

Mr. GREEN. You say by steam alone?

The WITNESS. The annual costs when operating by steam alone were as follows, according to Mr. Main's schedule 177: "Coal, at \$4.05 a ton, \$21,246.30"—

The CHAIRMAN. What is the use, Mr. Matthews,— I

appeal to you, Mr. Brooks,— what is the use of his reading the very thing that is in here? Why can't he take results, and say it is the same thing? What is the use?

Mr. BROOKS. There would not be any, if your Honors will allow the schedule to come in; but, don't you see, my next question and perhaps my next two or three questions are going to bring to your attention what he has omitted from this schedule. I am endeavoring to get into as succinct form as I know how in my feeble way a tabulation by testimony —

The CHAIRMAN. Go ahead.

Mr. BROOKS. So that it may be of benefit to your Honors, and may be readily comparable with some of the others.

The CHAIRMAN. All right; go ahead.

Mr. MATTHEWS. That is what we suspected and what we object to.

Mr. BROOKS. Well.

The CHAIRMAN. Well, cost of steam power alone. Go ahead. What were you saying?

The WITNESS.

Coal, at \$4.05, using 1.6 pounds per horse power per hour, with no charge for banking	\$21,246.30
The removal of the ashes	100.50
Oils and supplies	1,025.00
Wages	4,284.00
Repairs and depreciation on the steam plant	5,000.00
(That item also includes interest and taxes.)	
Insurances	162.50
Total, neglecting fixed charges on land and privilege	\$31,818.30

If this last result is compared with the annual operating cost of the combined plant, per the testimony and schedules of Mr. Main, there is a yearly loss by the use of water power and paying \$1,500 per mill power for each of the 16 mill power of \$4,399.85, which corresponds to the annual rental value of \$1,225 per mill power for each of the 16 mill power, with a free bonus.

By Mr. MATTHEWS.

Q. By free bonus you mean no bonus? A. No bonus.

By Mr. BROOKS.

Q. Did Mr. Main omit any fixed charges in that schedule, in your opinion? A. Yes, sir, several.

Q. State what they are. A. I suppose you mean by "fixed charges" charges.

Q. Yes, charges. Leave out the "fixed."

By Mr. MATTHEWS.

Q. That is in schedule 22, Exhibit 177, is it? A. Yes. In the first place, I think that his engine load was entirely too small. It should have been increased 144 horse power, so as to have been comparable with 1,040 horse power by water.

By Mr. BROOKS.

Q. Why? A. Because the friction of an engine is in the neighborhood of 10 per cent. itself, and that friction must be overcome before any power can be delivered from the engine on to the shaft to be worked. In the next place, he had 306 days a year running instead of 339, as under the new offer.

Q. That is on the basis of the number of restricted days being reduced to six? A. To six by auxiliary steam alone. He made no allowance for feed water, whether running the combined plant or steam alone. His coal consumption did not allow for banking. When operating by steam power alone he made no allowance for feed water or for condensing water; both were free. He put the economy of the engine down to 1.6 pounds of coal per horse power per hour, and allowed nothing for banking. He made no allowance for pumping water up to the top of the cooling tower, or for operating the fan for cooling the same. Those were substantially the omissions. He did not allow for any coal passer or any wages for operating the plant 59 days of 24 hours each, when the plant is shut down Sundays and holidays, by his basis.

Q. That is, when it was shut down upon his theory? A. Yes, sir.

Q. His assumption? A. In other words, this plant would operate the 306 days of 24 hours each, continuous, day and night, of course, and require no superintendence 59 days of

24 hours each, no one to clean the boilers or keep steam up in them or overhaul the engine.

Q. Now will you take Mr. Manning's estimate upon the same basis that you have just been considering? A. His estimates are given in Exhibit 195. According to that exhibit and the testimony of Mr. Manning, his fixed charges are placed on structural values of \$62,400 for the hydraulic plant and \$39,550 for the steam plant. He took the horse power corresponding to 16 mill powers at 1,040.

Q. That is, 65 horse power to a mill power? A. Yes, sir, and he took the corresponding engine horse power at 1,130. He ran his plant 308 days of 24 hours. The annual operating costs of the combined plants were, according to his testimony:

Water rental (no rebate)	\$24,000.00
Coal, at \$4 a ton, 1½ lbs. per horse power per hour, with no allowance for banking, was (for the steam auxiliary, running 30 days),	2,544.00
Oils and supplies	336.00
Wages on the water plant	468.00
Wages on the steam plant	560.00
Repairs and depreciation on the steam plant	1,186.50
Repairs and depreciation on the water plant	1,872.00
Interest and taxes on the water plant	3,120.00
Interest and taxes on the steam plant, and insurances	1,993.50

The total cost per year of operating the combined plants, according to Mr. Manning, neglecting any fixed charges on land and privilege, and charging full rental of \$1,500 per mill power for each of 16 mill powers, was \$36,076.00

The annual operating costs by steam power alone, according to Mr. Manning, were as follows:—

Coal, at 1½ lbs. per hour to the horse power, making no allowance for banking, and charging \$4 per ton	\$18,644.00
Oils and supplies	1,232.00
Wages	5,082.00
Repairs and depreciation	2,847.60
Interest and taxes	2,373.00
Insurances	237.30

Making a total cost per year, neglecting fixed charges on land and privilege, of \$30,416.00

Which shows, when compared with Mr. Manning's costs of operating by water power combined with steam power, a saving

per year by the use of steam of \$5,660, which results in a rental value of \$1,146.25 for each of the 16 mill power, with a free bonus,—that is, with no bonus.

In these estimates of Mr. Manning's he has for the combined plant allowed no rebate for 30 days when he runs his steam auxiliary. He allows nothing for feed water. He allows nothing for banking of fires or removing the ashes. In his estimates for operating by steam power alone, he made no allowance for feed and condensing water. He makes no allowance for banking the fires or removing the ashes or for pumping the water up to the top of the cooling tower, or for operating the fan to cool the same, or for a coal passer. He makes no allowance for the care and maintenance of the steam plant for 57 Sundays and holidays of 24 hours each. Had Mr. Manning made a rebate for the 30 days when he operated his combined plant by steam, his rental value per mill power, instead of being \$1,146.25, would have been \$1,240; and had Mr. Main made a rebate when operating the combined plant by steam for the 23 restricted days, the rental value, instead of being \$1,225, would have been \$1,340 per mill power for each of the 16 mill power, with no bonus paid.

(Mr. Brooks introduced at this point, no objection being made, a schedule prepared by the witness in correction of his schedule of friction tests, Exhibit 277, notice of such correction having been given at the afternoon session of Wednesday, May 8. The corrected schedule was marked "Exhibit 278, F. H. B.," and is printed in connection with the notice of the correction, page 397 of this volume.)

Q. Have you examined Mr. Main's Exhibit 178? A. I have.

Q. And whether or not you have prepared an estimate upon the cost of producing 500 engine horse power, with a steady load of 10 hours per day, 306 days per year, with a compound condensing engine plant? A. I have.

Q. With condensing and feed water free? A. I have.

Q. What did you assume as the cost of the plant? A. The same as Mr. Main, \$30,000.

Q. And what result do you attain? A. A cost per engine

horse power per year of \$26.49, which is equivalent to a cost per net horse power on the shaft per year of \$29.43.

Q. How did you obtain that? A. By charging annual operating costs as follows:—

Coal, at \$4.05 per ton, 2 lbs. of coal per horse power per hour, allowing for banking over nights, Sundays, and holidays	\$6,087.00
Wages	2,960.00
Oils and supplies	600.00
Insurances	75.00
Removal of ashes	31.00
Interest on plant	1,200.00
Depreciation and repairs	1,320.00
Taxes	375.00
Total operating costs per year	\$13,248.00

Q. Neither the estimates of yourself nor Mr. Main on this basis comprehend any fixed charges on the land covered by the power plant? A. No, sir.

Q. Or by the plant driven by the engine? A. No, sir, nor any cost for handling the water for condensing purposes or any cost for feed water or condensing water.

Q. And this estimate you make upon the same general theory as the estimate of Mr. Main? A. Yes, sir, in every respect.

By Mr. GREEN.

Q. What was your per cent. of depreciation and repairs? A. Repairs 2 per cent. and depreciation 2.4 per cent.

By Mr. BROOKS.

Q. Mr. Whitham, I have not asked you with reference to the various per cent. allowances for charges at any time through the testimony that you have given to-day, I think?

A. Well, I think that you asked me to point out some of them this morning.

Q. And others I did not? A. Yes, sir.

Q. Mr. Whitham, in this comparison that you have just testified to, have you changed any of Mr. Main's figures? A. No, sir.

Mr. GREEN. Which is that?

The WITNESS. Exhibit 178.

Q. Have you made an estimate upon the cost of producing 200 engine horse power for 10 hours per day for 306 days in the year, using a compound condensing engine, with water free? A. Yes, sir, with a steady load.

Q. With a steady load. And is that a — was an estimate made upon that basis by Mr. Main? A. Yes, sir.

Q. I wanted to find out the exhibit. A. In Exhibit 179.

Q. Yes. And what did you assume for the first cost of the plant? A. The same sum which he took, \$15,000.

Q. And what result did you obtain? A. The cost per year for this 10 hour power, steady power, \$34.81 per horse power, engine horse power.

Mr. MATTHEWS. What?

The WITNESS. \$34.81 per engine horse power, or \$38.68 for a net effective horse power per year.

Q. On the shaft? A. On the shaft.

Q. And how did you arrive at that result? A. By the following annual operating cost. Coal —

Q. And now I would like to have you from now on specify the comparisons as you go on. A. Coal, at \$4.05 per ton, 2½ pounds per hour per horse power —

Q. Per horse power hour? A. Per horse power hour, plus an allowance for banking, \$2,738.

The removal of the ashes, one-twelfth of the coal being ash, at 25	
cents per ton	\$13.00
Oils and supplies	400.00
Insurances, one-half of 1 per cent. on the first cost	75.00
Wages	2,288.00
Interest —	

Mr. GREEN. Two thousand how much?

The WITNESS. \$2,288.

Interest on plant at 4 per cent. of first cost	\$600.00
Repairs on plant at 2 per cent. of the first cost	300.00
Depreciation at plant of 2.4 per cent. of first cost	360.00
Taxes at 1½ per cent. on first cost	188.00
Total operating cost	\$6,962.00

This does not include any estimate for fixed charges on land covered by the plant or on land that is covered by the mill which is driven by the plant.

Q. And have you changed at all Mr. Main's figures? A. No, sir.

Q. In your comparison with him, contained in Exhibit 178? A. 179, no, sir.

Q. 179? A. No, sir.

Q. In Mr. Main's coal estimate was there any allowance for banking? A. No, sir.

Q. That is, Mr. Whitham, your cost per year for this kind of power is \$34.81 as compared with Mr. Main's cost, Exhibit 179, of \$25.32? A. Yes, sir, for an engine horse power.

Q. An engine horse power, and for effective horse power on the shaft? A. His figure would be increased to \$28.13, which should be compared with my figure of \$38.68.

Q. And your cost of producing 500 engine horse power, with a steady load 10 hours per day, 306 days per year, with a compound condensing engine plant, with condensing and feed water free, was \$26.49? A. Yes, sir.

Q. As compared with his \$20.49? A. Yes, sir.

Q. That is engine horse power? A. Engine horse power.

Q. And the effective power delivered on the shaft would be from his estimate how much? A. It should be \$22.77 per horse power.

Q. And yours? A. As compared with my \$29.43.

Q. For the effective horse power delivered on the shaft? A. Yes, sir.

Q. Have you prepared a table of the cost of operating the present hydraulic plant on a 600 horse power average load, variable, and a peak or maximum load of 16 mill powers of non-permanent water, restricted 6 days of 24 hours each per year, and supplemented by the present steam auxiliary plant, as compared with the cost of operating with compound condensing engines with a cooling tower? A. I have.

Mr. GREEN. What is that in answer to?

Mr. BROOKS. That is meant to give the Commission an estimate, in view of the present offer as it stands amended.

The CHAIRMAN. It is estimated on that basis.

Q. Now will you be kind enough to state the results obtained by you in that estimate, and how the estimate is made

up and the results obtained? A. The estimate shows that the rental value is \$2,145 per mill power year for each 16 mill power, after having paid \$72,000 bonus.

Q. And for these — and at this 600 horse power average load? A. Yes, sir.

Q. Now you compare that with steam alone? A. Yes, sir, the combined plant and the steam plant alone.

Q. The compound condensing engines? A. Yes, sir, on this site. And the operating costs for the combined plant are based upon actual structural values of January, 1898, as testified to by me in Vol. IV. of hydraulic plant, \$89,449; steam plant, \$50,071; mill site and mill privilege, \$72,000.

The operating costs by the combined plants consist of the following items: —

Water rentals on 16 mill powers	\$24,000.00
Feed and condensing water	17.00
For operating six days a year	
Coal, at \$4.05 per ton	601.00
The removal of the ashes	3.00
Oil and the supplies	90.00
Labor	170.00
Repairs and depreciation on the steam plant	500.00
Repairs and depreciation on the water plant	244.00
Insurances	250.00
Taxes and interest on plants	7,325.00
Interest on land and privilege	2,880.00

Q. Now, Mr. Whitham, you neglected to state in that what the percentage — A. I took for interest and taxes $5\frac{1}{2}$ per cent., or, for interest alone, 4 per cent.; taxes alone, $1\frac{1}{2}$ per cent.; total annual cost of operating the combined plants would be \$36,060.00. The actual structural cost as of January, 1898, or values for the steam plant alone, would consist of \$50,071, for the steam plant, \$9,000 for compounding the engines, \$15,000 for the cooling tower and condenser; one extra boiler, \$1,500. The cost of operating by steam power alone consists of the following items: —

Feed and condensing water	\$1,341.00
Coal, at $2\frac{1}{2}$ tons per horse power hour, besides banking, charged at \$4.05 per ton, a total of	23,168.00
The removal of the ashes	119.00

Cost of pumping water to the top of the cooling tower, and cooling same by the fan blast	\$3,390.00
Oils and supplies	1,277.00
Labor	5,200.00
Repairs and depreciation for the steam plant.	5,890.00
Insurances	378.00
Taxes and interests, at a total of $5\frac{1}{2}$ per cent.	3,967.00
Interest on land at 4 per cent., land being taken at 75 cents per square foot and in quantity equal to that in the new offer or amended offer	<u>1,652.00</u>
Making total annual operating cost by steam power alone . .	\$46,382.00

If this be compared with the total annual operating costs of the combined plant, there appears a saving per year in favor of the use of water power of \$10,322, from which it appears that the rental value is \$2,145 per mill power for each 16 mill power, after paying \$72,000 bonus.

Q. Mr. Whitham — by the way, there were one or two tables I was asking Mr. Whitham about, and I came to the conclusion that your Honors had been so very kind to us that we would not insist upon having them put in. Mr. Whitham, have you made an estimate of the value of the half mill power of permanent water that goes under the present offer with the gas plant? A. I have.

The CHAIRMAN. Wasn't that testified to recently, Mr. Brooks?

Mr. BROOKS. No, your Honor.

Mr. GREEN. Mr. Allen gave some testimony —

Mr. GOULDING. The new offer turns this into a permanent mill power.

The CHAIRMAN. It changes it, all right.

Mr. MATTHEWS. Changes it from non-permanent to permanent?

Mr. BROOKS. I don't think Mr. Whitham ever estimated this as non-permanent power; but I am not asking about that.

Q. Be kind enough to tell us what, in your opinion, is the value of the right to take that power at a rental of \$1,500 per annum. Have you figured it that way? A. I have not figured it that way.

Mr. BROOKS. Then I will withdraw my question.

Q. What do you find to be its rental value? A. With a

bonus of \$2,250 paid for the one-half mill power privilege, the yearly rental value of the one-half mill power is \$2,519.

Mr. MATTHEWS. Two thousand what?

The WITNESS. \$2,519.

Q. And how do you arrive at that result? A. By the following steps: first: I take from the testimony of Mr. A. F. Sickman, given, I think, April 1, or recently,—no, given last week,—one quarter of a mill power as the load now used for power. I also take from the testimony given this week of Mr. Snow a water consumption of 9,100,000 gallons per year for non-power uses. To replace the one-quarter mill power now used for power would cost by steam \$3,472 a year.

Mr. GREEN. Is that the quarter mill power?

The WITNESS. Yes, \$3,472 a year. If produced by a gas engine which would use gas from the holders at a charge of 50 cents per thousand cubic feet, the annual cost operating this engine would be \$2,096. The cost of the 9,100,000 gallons of water used per year at meter rates in Holyoke, as per testimony of Mr. Newcomb—

Q. Well, what rate did you assume,—I will, rather, put it that way,—what rate did you assume for the meter, for the water meter? A. 15 cents per thousand gallons for the first 50,000 gallons, and then 10 cents per thousand gallons for the next 150 gallons, then 5 cents per thousand gallons for all of the remaining water bought, all of this being subject to a 10 per cent. discount for cash.

Q. On the City rates? A. Yes, sir.

Mr. MATTHEWS. What is your total?

The WITNESS. I haven't given it. The cost of this 9,100,000 gallons of water under these water rates would be \$513 a year, which is substantially the same in cost per year as installing a pumping plant and pumping that water out of a well. The total cost, then, of replacing this one-quarter of a mill power by a gas engine, which is much cheaper than by a steam engine, and of buying this water or of pumping it out of the well, amounts to \$2,609 a year. Excluding any value in the remaining part of the one-half mill power which is not now used, there would be, after paying a bonus of \$2,250 for the one-

half mill power, a rental value of \$2,519 for the one-half mill power per year.

Q. Is there any further detail to that calculation, Mr. Whitham? A. Yes, sir, about three pages; but those are the results.

Q. That is, you have given the results? A. Yes, sir, I have all the details.

Q. You have all the details which go to make up those results? A. I have.

Q. Let me see them. (Witness passed papers to Mr. Brooks.)

Mr. BROOKS. Are there any objections on the part of the Commissioners to adjourning now?

The CHAIRMAN. No, except—can't we dispose of this question?

Mr. BROOKS. I thought we could obviate the putting in of some details that have not been put in. If you will adjourn now, I do not think you will lose any time.

The CHAIRMAN. You know best.

Mr. BROOKS. There is quite a lot of detail that I have not made examination of. I do not think I should care to put it in. If my friends want it in cross examination, they can have it; but I do not see that any time will be lost if you stop here.

The CHAIRMAN. Monday morning at ten o'clock.

(Adjourned to Monday, May 13, 1901, at 10 A.M.)

